DOCUMENT RESUME

ED 218 013 PS 012 936

AUTHOR Klayman, Joshua, Ed.; Moore, Shirley, Ed.
TITLE Reviews of Research for Practitioners and Parents. No. 2.
INSTITUTION Minnesota Univ., Minneapolis. Center for Early Education and Development.
PUB DATE 82
NOTE 80p.
AVAILABLE FROM CEED/University of Minnesota, 51 E. River Rd., Minneapolis, MN 55455 ($6.50 including postage; $5.50 each for 10 or more).

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Attribution Theory; Cognitive Ability; *Compensatory Education; Early Childhood Education; *Emotional Development; *Hospitalized Children; Interpersonal Competence; Intervention; Parent Influence; Problem Solving; Psychological Needs; *Self Concept; *Social Cognition; *Social Development; Teacher Influence

ABSTRACT

Written by scholars interested in practical questions, the four articles in this review of research on current topics in child development and early education focus on children's social and emotional development and the impact of various settings and interventions on that development. The first article explores the issue of how compensatory education affects children's social-emotional development. The emotional impact of a common but traumatic experience--being in the hospital--is discussed in the second article. Specific steps that parents and professionals can take to lessen the impact of the experience are outlined. The third paper reviews research on teaching children social-cognitive problem-solving strategies to help them handle everyday interpersonal problems. Implications for home and school settings are discussed. The last article focuses on some of the determinants and implications of children's self-concept, describing how adults can intervene to help improve children's perceptions of themselves. (RH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Reviews of Research for Practitioners and Parents

No. 2

Editors:

Joshua Klayman
Shirley Moore

Center for
Early
Education and
Development

Copyright © 1982

Center for Early Education and Development
College of Education
University of Minnesota
51 East River Road
Minneapolis, Minnesota 55455

TABLE OF CONTENTS

Preface and acknowledgments

The impact of compensatory education programs on social and emotional development

DANA FOX

Psychological preparation for children going into the hospital

JACKIE GNEPP

Teaching children social-cognitive problem-solving skills: A review of selected studies

EUGENE S. URBAIN AND PHILIP C. KENDALL

Adults as agents in the child's perception of the self

RUTH G. THOMAS

PREFACE AND ACKNOWLEDGMENTS

This is the second volume of reviews of research on current topics in child development and early education to be published by the Center for Early Education and Development at the University of Minnesota. When the first volume was published in 1978, the goal of the reviews was to fill a perceived information gap between highly technical research journals and over-simplified mass media presentations of research. Response to the first issue suggests that there is indeed a wide audience of professionals, students, and parents who are interested in accurate, non-technical descriptions of recent child-related research. The topics presented here have both theoretical and practical import. The articles were prepared by scholars who are interested in practical questions; each article combines a non-technical summary of recent research with a discussion of potential applications of the findings.

Although the four topics under review represent different areas of child-related research, they share a common focus on children's social-emotional development and the impact of various settings and interventions on that development. The first article, by Dana Fox, concerns a particular aspect of the hotly-debated question of the effects of compensatory education: specifically, how such education affects children's social-emotional development. The emotional impact of a common but traumatic experience--being in the hospital--is discussed in the second article by Jackie Gnepp. Specific steps that parents and professionals can take to lessen the impact of the experience are outlined.

The third paper, by Eugene Urbain and Philip Kendall, reviews research on teaching children social-cognitive problem-solving strategies to help them handle everyday interpersonal problems. The implications for home and school are discussed. The last article, by Ruth Thomas, focuses on some determinants and implications of children's self concept and how adults can intervene to help improve children's perceptions of themselves.

The editors of this volume wish to thank the four authors of the reviews for their hard work and dedication to the concept of research dissemination. We also wish to thank Karen Kurz-Reimer and Martha Rosen who helped with the editorial task; Evy Fishlowitz, Jackie Gnepp, Kathleen McNellis, Rhoda Redleaf, Edward Schork, and William Stixrud who were members of the Publication Committee that planned the volume; Rhoda Redleaf and Rita Warren who served as consumer-readers of the manuscripts during their preparation; and members of the CEED staff, especially Erna Fishhaut, who facilitated the production of the volume. It is the hope of all of us that the material will be informative and thought-provoking for parents, practitioners, and students of child development.

Joshua L. Klayman
Graduate School of Business
University of Chicago

Shirley G. Moore
Institute of Child Development
and Center for Early
Education and Development
University of Minnesota

Editors

THE IMPACT OF COMPENSATORY EDUCATION PROGRAMS ON SOCIAL AND EMOTIONAL DEVELOPMENT

Dana Fox

Introduction

Evaluations of Head Start and Follow Through programs over the past decade have stimulated a sense of pessimism about the value of the educational intervention of such programs. There has been widespread publicity claiming that they have failed to produce lasting effects on children's cognitive development. At first there did seem to be some benefits, but these washed out in short term followup studies. Although Head Start programs have not been eliminated, there has been a reduction in public and professional enthusiasm toward early education programs.

Recently, however, interest has focused on the original goals of such programs and the nature of the process by which they have been evaluated. The question has arisen as to whether early intervention efforts are being dismissed prematurely. In the initial evaluation studies, very little attention was given to attitudinal, social, and emotional influences of such programs. Yet certainly, most teachers of young children believe that their programs do involve social-emotional benefits for participants. In this review, evaluation issues are examined with particular emphasis on early education's impact on the social and emotional aspects of children's development. New data have become available through the efforts of a group of initial Head Start sponsors, the Consortium for Longitudinal Studies. Their findings are also discussed in this review and lead to a much more positive perspective on early education programs.

Dana Fox is a graduate student in Child Psychology at the University of Minnesota and is a School Pschologist in Bloomington, Minnesota.

Large Scale Evaluations of Head Start and Follow Through

Head Start began as one aspect of the War on Poverty. A guiding assumption was that children from poor families are at a disadvantage at school entrances and that a compensatory educational program could increase their academic readiness and thereby improve their long-range chances for breaking out of the "poverty cycle." In a review of Head Start Planned Variation[1] research, Bissell (1972) lists five specific goals for these preschool programs. They are: (a) fostering emotional and social development of the child by encouraging self-confidence, spontaneity, curiosity, and self-discipline; (b) promoting the development of the child's thought processes and skills, with particular attention to conceptual and verbal skills; (c) establishing patterns and expectations of success in order to create a climate of confidence for future learning efforts; (d) increasing the child's capacity to relate positively to family members and others; and (e) increasing the sense of dignity and self-worth in the child and family.

Four of the five goals identified above emphasize attitudinal, motivational, and social factors, while one is more cognitive. It is clear that program sponsors proposed a broad-based definition of academic readiness, not simply cognitive growth. In thinking about these goals, one must consider basic questions such as: (1) Can a short term program produce sustained positive effects for a child despite the family stresses that accompany severe poverty? and (2) How can these effects be assessed?

The question of assessment is most interesting in light of claims that compensatory education has failed to realize its potential. Despite the preponderance of social-emotional goals, the majority of research projects examining the effects of compensatory programs for young children have focused on cognitive outcomes, particularly performance on IQ tests. In the long run, results in this domain have been disappointing. With remarkable consistency, children who attend Head Start classes show an immediate increase in test performance over nonparticipating low income peers. However, within the first couple of years in school, the nonparticipants show a brief period of improvement, appearing to catch up with the Head Start children. Then both groups of children get progressively further behind their middle class peers (Bronfenbrenner, 1974).

A response to this pattern of results was to extend Head Start intervention models upward into the primary grades with

Follow Through classes (Moore, 1977). The assumption was that without continued educational supports, the growth achieved in preschool would not be sustained. The goal was to maintain the preschool effects, but again a variety of noncognitive goals were included, not simply higher academic test performance (Bissell, 1972).

In 1977, Abt Associates published a report evaluating the Planned Variation Follow Through projects[2] and reported disappointing results. For the most part, they found no differences between Follow Through (FT) participants and non-FT students, as tested on cognitive measures. Their primary positive conclusion was that the methods that do have a significant impact for children emphasize drill and basic skills, rather than broader cognitive or discovery-oriented instructional methods.

The Abt Report has been criticized on various methodological grounds to the extent that its results must be viewed with caution (House et al., 1977). Perhaps the most significant criticism, however, is that many important questions were simply never asked in the national Follow Through evaluation (Hodges & Sheehan, 1977). Although Head Start and Follow Through programs were launched with broad goals, in evaluation efforts, they have mainly been held accountable for children's intelligence and achievement test scores. Hodges and Sheehan examined the broader goals of various Follow Through programs and their internal evaluation projects. Some of their findings are discussed later in this review.

Two factors seem to have limited the scope of the large scale program evaluations. One is an implicit devaluation of the non-cognitive goals, and the other is the difficulty inherent in attempts to measure non-cognitive outcomes. Certainly, some critics of Head Start and Follow Through would take the position that, given the limited duration of cognitive or achievement gains demonstrated by the programs, emotional and social gains are unimportant. A variant on this theme is the position taken by Bereiter and Engelmann (1966) that the most reliable way of influencing the child's emotional and social well-being is through providing the child with a chance for cognitive success.

In support of the value of measuring IQ, it has been noted that IQ relates more consistently to other aspects of behavior than any other psychological measure of adaptation (Kohlberg & Zigler, 1967). However, other research suggests some important limitations of IQ test scores. They are of limited value in predicting occupational potential (Hudson, 1971) and intellectual

activity outside of school functioning (Masland, Sarason, & Gladwin, 1958). Given these results, it is likely that there may be program effects on children's ability to solve problems arising in everyday life that are not measured by standardized tests. Also, some programs may place less emphasis on skills that are components of the test taking process (e.g., concentration, rote memory), putting some children at a disadvantage in any evaluation that uses test scores as a measure of success. It is not necessarily the case that intervention that improves an individual's ability to cope with everyday life will reveal itself in lasting IQ changes as well.

The other issue that has influenced the direction of the national evaluation process is the difficulty in finding acceptable measures of motivation and social-emotional functioning. There is nothing comparable to an IQ or achievement test in these areas of development. The qualities that evaluators might try to measure, such as self esteem, initiative, achievement motivation, passivity, or curiosity, do not usually yield a quantifiable outcome in the manner of, for example, the number of math facts known. More often we think of them as processes or personality characteristics, employed in the course of functioning; for example, while learning a math fact. It is a great challenge to measure these characteristics directly.

Given that educational intervention programs do set non-cognitive program goals, what kinds of data do we have regarding them? To what extent has research shown educational interventions to have accomplished these goals? How significant are such effects? To provide better understanding of the measurement process, some of the techniques used to assess non-cognitive functioning are considered and critiqued.

Problems of Measurement of Non-Cognitive Functioning

One approach to measurement of non-cognitive functioning requires a child to describe or rate him/herself. An example of such self-report measures is the Coopersmith Self-Esteem Inventory, in which the child is asked to endorse a set of items as "like me" or "unlike me." In practice such tests have several problems. With self-report measures it is hard to disentangle accurate self-description from the common human tendency to try to answer questions in a way that presents oneself in a favorable light. In addition, there is some question as to how accurately young children are able to describe themselves in interviews. Another widely used task is called Incomplete Sentences, which requires the child to respond to a sentence stem such as "I often

get scared when . . .." Away from the actual situations, there is some question as to whether young children can recall and report such information accurately.

Responses to such verbal measures are influenced by a child's intelligence and ability to communicate verbally, along with many of the non-cognitive factors they aim to measure. An example is the Brown IDS Self-Concept Referent Test, which requires the child to answer questions about her/his own picture, such as "Does (child's name) like to play with other kids or doesn't she?" Walker (1973) found that the score on this test relates more to achievement test scores than to other self concept measures (or socio-emotional measures in general). It can be difficult if not impossible to interpret the extent to which such scores reflect self concept or, for example, verbal skills, given that the tests are tapping both.

Observational/rating techniques are also used to assess non-cognitive functioning. Observers can be trained to high standards of objectivity so that two observers watching the same event will be able to give it the same rating. Observational methods are a distinct improvement over self-report since data come from watching the child's behavior, not asking the child to give verbal descriptions. However, there are problems concerning interpretation of results with these measures as well. Behavior is very sensitive to context, so that observations gathered in one circumstance may not always apply to the same child in a different situation. Observers can rate child behavior in a variety of natural contexts (such as a classroom) or in a structured, standardized situation (such as a curiosity box task), but it is not clear whether the measure of curiosity in the structured task is the type of curiosity behavior a child exhibits in his or her natural life contexts. Nevertheless observational measures show great promise as a component of future early childhood program evaluations.

There are some more easily quantifiable non-cognitive data sources in educational research. Outcome measures like school attendance is an example. Stallings (1975) found lower absence rates in flexible classrooms, compared with highly structured didactic classrooms. Obviously, no one would argue about the advantage of improved attendance. Children can't learn from programs they avoid. And with rising truancy figures for elementary school children, programs with good attendance must be doing something right. The important question is, what is it about more flexible classrooms that promotes better attendance? What are they doing right? This type of quantitative data often does not provide direct insight into the source of the demonstrated

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Erna Fishhaut

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

X Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED218013

HE012 936

effects. If we can uncover the factors that lead to such outcomes, we can greatly increase the utility of such data.

In summary, the evaluation of non-cognitive effects of educational programs has not simply been ignored due to lack of concern. The process is made difficult by limitations of measurement techniques. This must be kept in mind in interpreting data. Results that are supported by more than one type of measure or that are repeated by more than one program can be accepted with more confidence.

Impact of Early Education on Non-cognitive Qualitative Variables

This section briefly reviews results from a number of studies of school effects on non-cognitive measures. One of the more ambitious efforts to look systematically at the influence of educational programs on non-cognitive aspects of problem solving and adjustment is found in the work of Miller and Dyer (1975). These investigators designed their study to compare children in four different types of preschool programs. They studied children both at the end of preschool and after four years of elementary school, with and without Follow Through programs. In addition, Miller and Dyer tested a control group who were on a waiting list for Head Start and did not attend any preschool program. Before examining their results, it is helpful to know something about the curriculum and instructional style of each of the four educational programs -- Bereiter and Engelmann, DARCEE, Montessori, and Traditional.

Bereiter and Engelmann's (BE) model is a fast-paced, drill-oriented program with lessons in the academic skill areas of reading, arithmetic, and language. Children receive positive or negative feedback after each response. Non-academic materials are limited.

The DARCEE (DAR) model emphasizes expressive language and general conceptual development. Lesson periods, which are less rigidly structured than BE, cover areas such as classification, time and space concepts, and sequencing. Positive reinforcement is used to encourage self confidence, persistence, and motivation to learn. The model includes a weekly home visit to bring materials for parents to use with their children.

The Montessori (MON) program is centered around highly structured materials that are oriented to teaching specific concepts. These include auditory and visual discrimination, daily living skills (e.g., tying and buckling) and academic

subjects. No specific language goals are included. The teacher demonstrates use of the materials, and there is usually only one correct way to use them. Students work individually with materials and there is little emphasis on peer interaction. The teachers keep their verbalizations to a minimum and excessive praise is discouraged.

The Traditional (TRAD) program emphasizes social development and is oriented to broadening the child's experiences and stimulating curiosity. The program consists of free play in an object-rich environment. There are opportunities to use sensory and manipulative materials as well as to engage in socio-dramatic play. Learning takes place at a natural pace through interacting with the teachers and the materials. Teachers exert little control beyond some basic limit setting, and they use praise to encourage participation and promote self esteem.

After one year in the programs, all participants showed better performance on both cognitive (IQ) and non-cognitive measures than children in the control group. Non-cognitive effects differed depending on the program. Effects were assessed with both teacher and tester behavior ratings as well as through observations of performance in structured tasks.

A number of the measures Miller and Dyer used are designed to tap aspects of motivation and approaches to problem solving. For example, analyses show program participants (except BE children) to be higher than the control children on a measure of curiosity. In addition, program children performed strikingly better on a measure of persistance and resistance to distraction. On a measure of inventiveness and initiative requiring the generation of alternative solutions to a problem, DAR and MON children showed higher scores than controls.

Miller and Dyer also looked at aspects of the children's behavior in classroom and performance situations. The DAR program participants were rated significantly higher than others on a teacher rating of ambition. (This rating scale was created by combining teacher behavior ratings of timidity, independence, and achievement motivation of their students). Another teacher rating placed DAR and TRAD children higher in verbal-social participation in classroom and play activities at the end of the year. Finally, children in the BE and TRAD programs were rated relatively higher by the testers on a checklist describing their "test-taking behavior."

When all children were retested four years later, IQ differences had disappeared. The only detectible effects were in

the non-cognitive areas, although some of the earlier non-cognitive effects had also disappeared. There were no differences between participants and controls on resistance to distraction. However, both groups scored at the top of the range, suggesting that this measure was probably not challenging enough to show differences among children of this older age. Also, controls had overtaken participants on the tester ratings of test-taking behavior.

Some effects did remain. DAR and MON children performed significantly higher than others on the inventiveness task, and DAR and TRAD participants were still rated highly on verbal-social participation. While the higher scores of program participants on the curiosity tasks did not persist, BE participants continued to get the lowest scores. Results do not clearly suggest that participation in a Follow Through elementary program helped to maintain earlier effects.

Miller and Dyer's results are not easy to interpret. The observer ratings and special tests show many short-term effects that seem to result from participation in programs. The fact that several effects diminish over the years may be due to a number of factors. It is, of course, possible that intervention simply does not lead to long-term gains, or that Follow Through programs were not effective in maintaining gains. However, other less pessimistic explanations seem plausible as well. It might be that the qualities being studied change with development and are no longer adequately tapped by the measures used, or that the tests themselves are inherently weak or inconsistent. Despite the apparent disappearance of some effects, Miller and Dyer conclude that a modest number of significant non-cognitive effects of preschool experience are maintained up to four years later.

In a similar extensive study Bissell (1972) reported that there is some influence of different program models on preschool children's response style during test taking. She described a method of scoring Stanford Binet IQ Test responses devised by Hertzig and Birch. In addition to scoring answers for correctness, children's responses were coded on the dimension of work/nonwork. Nonwork responses included a substitution, or no response. Work responses could be correct answers, but also included "extended" responses in which the children were addressing the problem but were not clearly focused or efficient in doing so. At the end of a year of preschool, all children had decreased in substitutions and in extended work responses, apparently having learned what a question is and how to focus on

the essential components of the answer. However, the participants in an academic skills model had also increased in "no response" answers, which Bissell suggested reflects a passivity not instilled in the flexible discovery program. This factor could well have long range implications for children's adaptation in the classroom.

A followup study of children in a preschool program by E. Kuno Beller (1974) included assessment of goals such as improved attitudes toward self and school as well as classroom behavior. Beller's preschool program for poor children is a traditional, flexible, discovery-learning program with both intellectual and social goals, including the development of curiosity, self-esteem, and creativity. Measures for evaluating outcomes included observer rating scales of child behavior, teacher ratings, and child self-ratings.

Children who started school in Beller's program were compared with others who began their education in kindergarten or first grade. In systematic observations conducted in first grade, the preschool group was significantly higher on ratings of independent achievement behavior and aggression and lower on dependency conflict (ambivalence over seeking assistance). Beller interpreted these results to mean greater self-confidence in children who have been to preschool. It is possible, however, that other explanations such as greater comfort in a school setting due to longer exposure or increased self expresiveness might also explain these results. In any event, there were significant behavioral differences between the groups when observed in first grade. In second grade, teachers were asked to rate the children on popularity and on attitudes toward school and study. While popularity did not differ for children who had been in the preschool, these children did receive higher ratings on attitudes toward learning. In the fourth grade administration of the Piers-Harris self-concept ratings, in which children pick descriptive statements for themselves, the preschool group endorsed primarily positive items, while the children beginning their education in grade one produced relatively negative profiles.

Of the evaluation studies reviewed, Beller's shows the broadest range of positive results from a variety of data sources. However, one problem in interpretation is that the children were not randomly assigned to the preschool program. This means that it is possible that children whose parents chose to enroll them in school earlier had a different general profile from those whose parents waited for mandatory school entrance

age. The approach used by Beller, in which a variety of data sources are used to tap social-emotional functioning, is well worth repeating with clearer matches of school and control groups, given the possible importance of such effects.

Some further data are available on participants in Follow Through elementary education projects. As mentioned before, the Abt report (Education as Experimentation, 1977) described a national planned variation study. Despite the existence of a variety of programs with a multiplicity of goals, this study was designed with a narrow range of outcome measures. The only two measures that addressed nonacademic goals were the Coopersmith Self-Esteem Inventory and the Intellectual Achievement Responsibility Scale. The former consists of a variety of self-descriptive statements that a child can accept or reject, while the latter is designed to look at whether a child perceives him/herself as responsible for successes and failures in school or attributes these to outside forces ("It was too noisy" or "I got help"). For the Follow Through students overall, there was no clearcut advantage on these measures. However, three specific programs, Oregon Direct Instruction, Kansas Behavior Analysis, and Florida Parent Education, did appear to be effective on the non-cognitive measures. The effects are puzzling since, of these three, only the Florida program had a major non-cognitive component. Other programs emphasizing non-cognitive goals did not emerge with positive effects. However, it is evident that even programs that construe their goals as primarily cognitive can influence non-cognitive functioning. The Abt results also highlight the fact that different programs can have different effects.

Hodges and Sheehan (1977) point out that many participating Follow Through programs emphasized goals that were not evaluated in the national study. There are strong programmatic differences among models. Some sponsors feel that with nurturance and well designed environments children will gravitate toward learning experiences; others feel that children need highly structured input and direct instruction in order to learn. Many program sponsors, with limited funds and somewhat limited objectivity toward their own programs, designed evaluation procedures tailored to their own goals. Most of the dimensions that differentiate program goals were not considered by outside evaluators, but Hodges and Sheehan have collected some of the results of sponsor-designed measures. For example, Weikart's cognitive program (High/Scope) emphasized language skills, including the ability to speak fluently and to combine words into sentences in novel, nonimitative ways. A test was developed to

assess productive language, and participants were compared to controls. When tested in grade three, participants showed more verbal fluency, more diverse vocabularies, and better organization in their writing. In addition, teacher ratings of social emotional maturity significantly favor the participants over control group members (Weikart, Bond, and McNeil, 1978).

The Bank Street sponsors emphasized creativity, social skills, and self-expression in their program, and developed observational measures to assess these goals. They found modest differences favoring participants in the areas of cooperation, initiative, expression of thoughts, and original thinking. The Interdependent Learning Model assessed attendance rates and quality of school work and found that program participants had much better school attendance than control students. They also found a strong relationship between low attendance and low achievement. Overall, Hodges and Sheehan cite many instances where program sponsors (they had measures that were objectively reliable and valid) show success at reaching non-cognitive goals that they have built into their programs.

Using the same data as Abt (1977), Stallings (1975) analyzed differences in classroom structure and style of interaction within the general models. Observations of child behavior showed that in more flexible classrooms, compared with highly structured didactic classrooms, children were involved in more cooperative activity, showed more verbal initiative, and engaged in more independent work. She found no differences between groups on the Self-Esteem Inventory, but on the Individual Achievement Responsibility Scale, children from the more flexible classrooms took more responsibility for their own successes while attributing their failures to external sources. The children from the structured classes showed the opposite pattern. They tended to take internal responsibility for their failures but not their successes. Finally, children from the most structured programs had the highest absence rates, while those in the flexible classes were less likely than controls to be absent from school.

Another intriguing piece of data contrasting flexible with more highly structured educational programs is presented by Soar and Soar (1969). They compared students from flexible and rigidly structured classrooms on academic progress made during the summer months when children were not in school. Children who were in flexible classrooms in the previous year showed more growth over the summer than those who were in more didactic programs. Soar and Soar suggest that classroom style influences learning style, and that children who have experienced a disco-

very type of program are more inclined to continue learning outside of the school environment.

Though we know relatively little about the impact on children of different approaches to education, several of the studies included in this section suggest that different strategies in programs do lead to distinctive results. While it is encouraging to confirm this commonly held belief, educational impact needs to be delineated and studied more often in intervention research so that teachers and parents can better understand their impact and become informed consumers.

Impact of Early Education on Overall School Adjustment: Grade Retention and Special Placement

Children who are successful in school move through the programs at the normal pace; consequently grade retention and special classroom placement are "bottom line" measures of general school adjustment. Data on these two measures are now available from several research projects. Generally results favor Head Start children over controls. Abelson (1974) reports that 82 percent of a sample of Head Start children vs. 65 percent of controls were promoted into first grade after kindergarten. Shipman (1969) also found more first and second grade retentions in the nonpreschool group than for children who had a preschool experience. Herzog and colleagues (1974) reviewed records of a sample at the beginning of grade four and found that 67 percent of the experimental group were at grade level compared to 53 percent of controls. While these differences are modest, they appear to reflect the programs' influence. Available evidence thus suggests that the Head Start experience has a positive effect on children's ability to progress through school on schedule.

Recently, twelve preschool programs' sponsors formed the Consortium for Longitudinal Studies in order to conduct a long-term followup of children who participated in their programs during the 1960's (Lazar & Darlington, 1978). Their goal was to study the long range effects of preschool on children's lives, with particular efforts to look beyond cognitive test scores.

Five of the twelve projects were able to present data on participation in special education; collectively, they found significant differences favoring the preschool children, who had fewer placements in special classes. Four of the five showed significant effects when analyzed as individual programs. A group of seven projects presented data on grade retention and

again showed significantly fewer program children retained than controls. At the level of individual projects, only one of the seven was independently significant. However, Lazar and his colleagues believe that a likely reason for this is the widespread practice of promoting children for social reasons, despite academic problems.

The social and personal costs of retention and special class placement are sufficient justification for taking these results seriously, even given the absence of IQ changes. It is also likely that these results reflect some dimensions of competence that other tests miss. These could include a greater ability to concentrate, more goal-directedness, better understanding of ways to approach tasks, better social skills, higher motivation to succeed, and greater parental support.

Conclusions

This review presents a number of studies of preschool and Follow Through intervention programs that measure factors other than IQ or achievement test performance. Although results are mixed, one thing is clear: There do seem to be effects of early education programs that have not received enough concentrated study. We have intriguing bits of information suggesting social, emotional, and instructional factors that can influence school performance in positive ways, but the nature of these effects needs more research and explication. In light of the relatively clear results with measures like grade retention, attendance, and special education placement, we must conclude that educational interventions do have effects. These measures have revealed a more promising picture of the value of early education than IQ data alone. It seems critical to continue to collect data on outcome measures, including documenting the preschool participants' performance into young adulthood, when their final education level and job performance can be examined. Weikart and his colleagues (1978) describe one such effort to follow the High/scope students to gather information on their social adjustment and accomplishments out of school.

It was premature to devalue early intervention programs when the lack of positive results was based purely on long-term intellectual/IQ data. Newer research has revealed important results on outcome measures with potentially positive implications for individuals as well as society. Although techniques for assessing non-cognitive program goals are still comparatively undeveloped, we must not lose sight of these goals in favor of others that are more easily measured.

Early childhood educators must continue to work on techniques for assessing how well the unique goals of their programs are achieved. In general, researchers could benefit from the input of teachers and program sponsors in conceptualizing how and where to look for educational program effects.

In the current political climate, opponents of early education are all too willing to cut back support for programs. Educators, program sponsors, teachers, and parents will have to take the initiative to ensure that their programs are not evaluated by a standard they never set out to reach. People working in the field are in a good position to make significant contributions to the process of conceptualizing program goals in measurable ways and developing devices appropriate for detecting the types of effects they are working to promote.

References

Abelson, W. Head Start graduates in school. In S. Ryan (Ed.), A report on longitudinal evaluations of preschool programs. Washington, DC: Department of Health, Education and Welfare, 1974.

Beller, E. K. Impact of early education on disadvantaged children. In S. Ryan (Ed.), A report on longitudinal evaluations of preschool programs, Vol. I. Washington, DC: Department of Health, Education and Welfare, 1974.

Bereiter, C., & Engelmann, S. Teaching disadvantaged children in the preschool. Englewood Cliffs, NJ: Prentice-Hall, 1966.

Bissell, J. S. Planned Variation in Head Start and Follow Through. In J. C. Stanley (Ed.), Compensatory education for children ages 2-8. Baltimore: Johns Hopkins University Press, 1972.

Bronfenbrenner, U. A report on longitudinal evaluations of preschool programs (Vol 2). Washington, DC: Department of Health, Education and Welfare, 1974.

Education as experimentation, A planned variation model. Cambridge, MA: Abt Associates, 1977.

Herzog, E., Newcomb, C., & Cisin, I. Double deprivation: The less they have, the less they learn. In S. Ryan (Ed.), A report on longitudinal evaluations of preschool programs. Vol. I. Washington, DC: Department of Health, Education and Welfare, 1974.

Hodges, W., & Sheehan, K. Follow Through as ten years of experimentation: What have we learned. NAEYC Symposium, 1977.

House, E. R., Glass, G. V., McLean, L. D., & Walker, D. F., with assistance from Hutchins, E. J. No simple answer: Critique of the Follow Through evaluation. Urbana, IL: Center for Instructional Research and Curriculum Evaluation, 1977.

Hudson, L. Intelligence, race and the selection of data. Race, 1971, 12, 283-292.

Kohlberg, L., & Zigler, E. The impact of cognitive maturity on the development of sex-role attitudes in the years 4-8. Genetic Psychology Monographs, 1967, 89-165.

Lazar, I. & Darlington, R. B. Lasting effects after preschool. Ithaca, NY: Consortium for Longitudinal Studies, Cornell University, 1978.

Masland, R. L., Sarason, S. B., & Gladwin, T. Mental subnormality. New York: Basic Books, 1958.

Miller, L., & Dyer, J. Four preschool programs: Their dimensions and effects. Monographs of the Society for Research in Child Development, 1975, 40(5-6, Whole No. 162).

Moore, S. The effects of Head Start programs with different curricula and teaching strategies. Young Children, 1977, 32(6), 54-61.

Soar, R. S., & Soar, R. M. Pupil subject matter growth during summer vacation. Educational Leadership Research Supplement, 1969, 2.

Shipman, V. Notable early characteristics of high and low achieving black low SES children (Report No. 76-21). Princeton, NJ: Educational Testing Service, 1969.

Stallings, J. Implementation and child effects of teaching practices in Follow Through classrooms. Monographs of the Society for Research in Child Development, 1975, 40(7-8, Whole No. 163).

Walker, D. K. Socioemotional measures for preschool and kindergarten children. San Francisco: Jossey-Bass, 1973.

Weikart, D. P., Bond, J. T., & McNeil, J. T. The Ypsilanti Perry Preschool Project: Preschool Years and Longitudinal Results Through Fourth Grade Ypsylanti, Michigan: High/scope Educational Research Foundation, 1978.

Footnotes

[1]Planned Variation Head Start was a project designed to study effects of specific variations in curriculum and techniques in preschool programs.

[2]This project was designed to compare effects of variations of theoretical and practical approaches on the education process across a large number of elementary school Follow Through classrooms.

[3]This task consists of a box containing a variety of items which the child can manipulate and look at. Observers rate verbalization and exploration of the box and its contents.

PSYCHOLOGICAL PREPARATION FOR CHILDREN GOING INTO THE HOSPITAL

Jackie Gnepp

Introduction

Hospitalization is generally considered to be a very stressful experience. For children, even a brief hospital stay can be a crisis -- a situation in which the child's coping mechanisms are strained to deal with the anxiety produced by the event (Goslin, 1978). In a comprehensive discussion of children's emotional reactions to hospitalization, Vernon and his colleagues (Vernon, Foley, Sipowicz, & Schulman, 1965) suggest four determinants of psychological upset: (a) unfamiliarity with the hospital setting; (b) separation from parents; (c) age --children between the ages of six months and three to four years being particularly vulnerable to upset during hospitalization; and, possibly, (d) the presence of emotional disturbance prior to hospitalization. A recent review of the research literature (Goslin, 1978) leads to similar conclusions.

Visintainer and Wolfer (1975) contend that hospitalization and surgery create a series of real, imagined, or potential threats for the child. They categorize these threats as follows: (a) physical harm in the form of pain, mutilation, or death; (b) the absence of parents and other trusted adults; (c) unfamiliar surroundings and unpredictable events; (d) uncertainty about acceptable behavior and limits; and (e) loss of control, autonomy, and competence.

* Jackie Gnepp is a graduate student in Child Psychology at the University of Minnesota and is an Instructor in the Department of Psychology at Northern Illinois University.

These authors agree that the child's age, previous experience with hospitalization, possession of relevant information, and support from parents may be mitigating factors. However, to the extent that these threats are not successfully handled, the child will find the experience stressful. Teachers, parents, and others who work with children are in a position to reduce a child's anxiety prior to medical procedures, to improve a child's adaptation to the hospital experience, and to advance physical and psychological recovery following a hospital stay. Thus, the purpose of this paper is to review research on ways to reduce the stress of hospitalization and to present some guidelines for psychologically preparing children for a hospital experience.

Psychological Preparation of Children

The earliest work on reducing stress in hospitalized children emphasized the importance of imparting information. Major reasons for providing information to children are that vague, undefined threats are more frightening than known and understood threats, and that unexpected stress is more upsetting than anticipated stress. Two other aspects of psychological preparation which were considered important were the encouragement of emotional expression by the children, and the development of trust and confidence in the hospital staff (Vernon et al., 1965).

One of the first studies to investigate the effect of preparation on post-operative reactions was carried out by Jessner, Blom, and Waldfogel (1952). They studied 143 children, ranging in age from under three years to 14 years, who were undergoing tonsillectomies. The children's parents were urged to prepare their children fully, and they were given a booklet to assist them in explaining the operation. Even with the help of the booklet, Messner and his colleagues found that the preparation of some children was either misleading or grossly inadequate. In any case, the preparation received by children who exhibited severe post-operative reactions (marked or persistent disturbances in eating, sleeping, or speech; tics and mannerisms; fears; regressive behavior) had not been substantially different from the preparation received by children showing only mild reactions or improvement.

Studies in which hospital personnel provided the psychological preparation seem to have produced more positive results. Prugh, Staub, Sands, Kirschbaum, and Lenihan (1953) provided 50 children, ages 2 to 12, with an experimental program of ward management that included psychological preparation for, and support during, traumatic procedures. The experimental program also

differed from the traditional hospital program in that it allowed more liberal visiting hours, earlier ambulation, a special play program, greater involvement of the parents in the care of their children, and special services for children having difficulties in adjustment. These children were compared with 50 children who did not receive this special treatment. There was little difference between these groups in the children's adjustment during the hospital stay. However, Prugh and his colleagues did report that significantly fewer children in the experimental group showed severe reactions immediately after discharge from the hospital. Children in the traditional group continued to exhibit more severe disturbances (e.g., hyperactivity, tantrums, sleep disturbances) three months after hospitalization. It should be kept in mind that Prugh's experimental program involved different ward conditions as well as psychological preparation of the children. Consequently, it is not possible to attribute the behavioral differences found between the two groups of children to the effect of psychological preparation alone.

Vaughan (1957) studied the effect of psychological preparation on 20 children, ages two through nine years, hospitalized for eye surgery. Vaughan reassured these children that he would look after them, gave them a simple explanation of what was going to happen, encouraged them to talk freely, and answered their questions. Thus, this preparation included the development of trust, imparting information, and encouraging emotional expression. Vaughan also visited the children twice following surgery. Another group of 20 children undergoing eye surgery did not receive this preparation. As in the cases of Prugh's children, the two groups did not differ with respect to disturbance while in the hospital, as estimated from the nurse's behavioral reports. However, 26 weeks after surgery, the children who had received psychological preparation were significantly less disturbed than those who had not, as determined from maternal interviews. Vaughan does not report whether the mothers or the interviewer knew what treatment the child received. This is a potential source of bias in their ratings of emotional disturbance.

It appears that the positive results in Vaughan's study were due largely to the effect of the preparation on children over four years of age, as all the children under four years were still disturbed, at least to some extent, six months after hospitalization. A similar, although less dramatic effect of age was reported by Prugh, et al. (1953). Apparently, younger children are not as responsive to preparation for hospital stresses as are older children.

Weinick (cited in Vernon, et al., 1965) studied 40 children, ages five to nine years, half of whom received special psychological preparation three days prior to undergoing tonsilectomies. A battery of psychological tests and parental interviews was given before preparation for surgery, 7 to 10 days after surgery, and one month following surgery. On the basis of these tests and interviews, three judges scored the intensity of the children's attitudes toward mother, father, independence, separation, and other topics. In this study, the judges did not know whether a child was in the prepared or unprepared group. Most of the children were judged to have "unhealthy" attitudes prior to surgery. The unprepared children showed an increase in the intensity of the unhealthy attitudes from pre- to post-surgery, whereas the children who received psychological preparation were judged to have healthy attitudes following surgery.

Of the studies reviewed thus far, all but one (Jessner's study, in which parents rather than hospital staff prepared their children) have found that psychological preparation reduces post-hospital upset or increases post-hospital benefit. However, there is no evidence in these studies to suggest that preparation affects in-hospital emotional reactions. Also, it is difficult to determine from these studies whether the psychological preparation per se produced the positive results, because the programs also changed other factors, such as ward atmosphere (Prugh, et al., 1953) and post-surgery intervention (Vaughan, 1957). (For further discussion of some methodological issues concerning these early studies, the reader is referred to Vernon, et al., 1965.) Also, it is not obvious what aspects of the preparation may have been effective. For example, was the effect of psychological preparation due to improving children's knowledge of what happens to them in the hospital, due to increased emotional support, or a result of both?

Psychological Preparation of Parents

In the 1950's, attempts to reduce hospitalization-related upset in children centered around psychological preparation of children, but two more recent studies examined the effect on hospitalized children of psychological preparation for their parents. Unfortunately, these and later studies focused only on mothers, rather than both parents. Mahaffy (1965) and Skipper and Leonard (1968) hypothesized that children's stress could be reduced indirectly by reducing the stress of the mothers. The reduction in parental distress was seen as a way to facilitate the parents' efforts to care for their children. This care, in turn, might reduce the children's upset. Furthermore, if parents

communicate a calm, confident, and relaxed state to their children, this might reduce the children's distress.

To test this hypothesis, Mahaffy (1965) studied 43 children between the ages of 2 and 10 years who were admitted for tonseillectomies, and who had had no previous hospitalization. Children were assigned to two groups, both of which received routine nursing care. In one group, the parents received special preparation in which:

> . . . the research nurse helped the mother by supplying needed information, answering her questions, or discussing anything which caused the mother to be confused or unhappy. The nurse having established a positive relationship with the mother, returned during the child's hospitalization at specific times to continue to identify the mother's needs and help meet those needs. (p. 14)

While there were no group differences in any vital signs at admission, the children in the parental-preparation group had significantly lower temperature, blood pressure, and pulse shortly before surgery, after surgery, and at discharge. Compared to the children receiving only routine care, these children also showed greater fluid intake, less frequent vomiting, shorter time to first voiding, and less crying post-operatively. In general, then, Mahaffy showed physiological differences between the groups of children during their hospital stay as a function of supportive treatment of their mothers. Unfortunately, Mahaffy did not report many group characteristics, and one can only assume that there were no spurious differences (e.g., age) between the two groups. Exactly how the supportive nursing care of the mothers led to better adjustment in their children is not clear. For example, did the supportive nursing care actually make the mothers less anxious? Did these mothers in fact give their children better care? Mahaffy provides no direct evidence to answer these questions.

Skipper and Leonard (1968) also examined the effect of reducing parental distress on 80 tonsillectomy patients between the ages of three and nine. Their study appears to be a replication of Mahaffy's (1965) work, with some additional measures. Children were assigned to one of two matched groups that were similar in age, sex, social class, health of children, and type of anesthesia used during the operation. As in the Mahaffy study, the mothers of one group participated in a program involving the communication of information and emotional support.

Significant differences between the children in the parental-preparation group and no-preparation group were again found for the same set of physiological measures used by Mahaffy. In addition, the nursing staff, who did not know which children were assigned to which group, evaluated the children in the parental-preparation group as showing greater adaptation to hospitalization than those in the no-preparation group. Also, according to maternal responses to a post-hospitalization questionnaire, more children in the no-preparation group showed unusual fear of hospitals, doctors, and nurses, sleep disturbances, and incomplete recovery from the operation one week later.

According to the mothers' self-reports and the nurses' evaluations, the prepared mothers themselves experienced less stress during and after the operation, less overall difficulty in adaptation, less lack of information during the hospitalization, less difficulty in feeling helpful to their child, and a greater degree of satisfaction with the total hospital experience. These results provide support for the hypothesis that a reduction of stress in the parents somehow mediates a reduction in stress for the children. It is worth noting, however, that age of the child was also an important factor on one of the measures. Regardless of treatment condition, children age three to six years suffered more from disturbed sleep the week following the operation than those age seven to nine.

Psychological preparation of parents was shown in these two studies to benefit both the parents and children by reducing their stress and helping them to adapt to hospitalization. While the studies of preparation for children found positive effects only following the hospital stay, the studies of preparation for parents showed that such preparation benefited the children both during and after hospitalization.

Psychological Preparation for Both Children and Parents

Maximum benefit may accrue to children and parents if they are both psychologically prepared for the children's hospitalization. Parents may be better able to cope if their children are less anxious and vice versa. Children and parents may also learn from each other if they receive information and support together and can react to it.

Wolfer and Visintainer (1975) tested this hypothesis by supplying preparation and "stress-point" nursing care to both parents and children. They studied 80 children between the ages of 3 and 14 who were admitted for minor surgery, and who had not

been hospitalized within the past year. One group of children received routine care. The other group received an experimental program providing a combination of psychological preparation and supportive care for mothers and children at six stressful times: at admission, before the blood test, late afternoon the day of surgery, before the pre-operative medication, before transport to the operating room, and upon return from the recovery room. The parental preparation and support followed the procedures of Mahaffy (1965) and Skipper and Leonard (1968) in providing individualized attention to the mothers, exploring their feelings, providing accurate information, giving reassurance, and explaining how the mother could help care for her child.

The children's preparation was integrated with the parents' preparation. It involved clarifying the children's misconceptions and providing information about when, how, why, and by whom medical procedures would be administered. The sensations and emotions the children might experience were described and, when possible, demonstrated (e.g., the pressure and smell of the anesthesia mask). The children were helped to identify obtainable goals (e.g., shortening the length of time required for a blood test), shown the behavior needed to attain the goal (e.g., holding still), and helped to rehearse the behavior. Other actions were decided by the children (e.g., whether to cry or count or give "commands" to the nurse during the blood test), and these behaviors were also practiced during the preparation period.

Wolfer and Visintainer (1975) concluded that stress-point preparation enables children to cope more effectively with the stresses of hospitalization. This was indicated by a nurse observer's ratings on a scale that measured degree of emotional upset and a scale that measured degree of cooperation with medical procedures, by time to first voiding, and by post-hospital adjustment (based on a parental questionaire). However, the no-preparation group contained a larger proportion of young children (preschool) than did the stress-point preparation group. Because the preschoolers were rated as more upset and less cooperative than the older children in this study, regardless of preparation, one must be cautious in concluding that the stress differences between the groups were entirely the result of treatment.

As compared to parents in this no-preparation group, parents in the stress-point preparation group reported that they had received more information (e.g., about type of operation and general hospital routines), were more satisfied with the care surrounding medical procedures and nurse-child interactions, and

felt less anxious. Again, however, these results are difficult to interpret in light of the younger age of children in the no-preparation group, since parents of younger children, regardless of treatment, had significantly higher anxiety ratings.

A second study by Visintainer and Wolfer (1975) compared four groups of children and parents to investigate: (a) whether the results of their previous study could be obtained with a single preparatory session, and (b) whether information, support, or both lead to stress reduction. In order to address these qustions, three treatment conditions (and one no-treatment group) were used. One group received preparation and support at six stress points, as in the previous study. A second group received single-session preparation consisting of the components and techniques of stress-point preparation delivered in one 45-minute period shortly after the child's admission to the ward. A third group received consistent supportive care that involved a nurse's giving warm support and reassurance to the children and parents, as well as answering their questions, during the six stress points. Unlike the stress-point preparation group, however, the nurse did not offer information about medical procedures nor help the children to anticipate what they would experience at each stress point.

This study involved 84 children between the ages of 3 and 12 who were admitted for tonsillectomies, and who had not been hospitalized within the past year. The results of this study support the conclusions of Wolfer and Visintainer (1975) with respect to the value of stress-point preparation over other techniques for reducing stress due to hospitalization. The benefits were measured by comparing behavioral upset and cooperation, post-operative fluid intake, recovery room medications, and post-hospital adjustment. Parents in the stress-point preparation group reported being less anxious and more satisfied with the care they received than parents in any of the other groups. Thus, psychological preparation before plus support during stressful events appear to be more effective in reducing stress for both parents and children than is support alone or a single preparatory session.

Filmed Modeling as Psychological Preparation

Many of the methods of psychological preparation described thus far may be considered costly and inefficient in terms of staff time. Showing children a film could be an economical way of preparing them for hospital procedures. Furthermore, filmed modeling has been shown to facilitate children's coping with

things they fear (Bandura, Grusec, & Menlove, 1967) and might therefore be useful in reducing stress for hospitalized children. Vernon (1973) and Vernon and Bailey (1974) compared the behavior of children who were prepared for anesthesia induction by being shown a movie of other children responding calmly to anesthesia induction with the behavior of children who received no special preparation. The 38 children studied, ages four to nine, were hospitalized for minor surgery. Half of them saw the film just prior to pre-operative medication.

The children's global mood was rated on a seven-point scale during four phases of the operative procedure: the "threat" phases (waiting in the hall prior to entering the operating room, and from entrance to the operating room until anesthesia began) and the impact phases (two periods during anesthesia induction). During the threat phases, children who had seen the movie were rated as significantly less upset. Viewing the film had less effect during the impact phases. One explanation for this is that the children who saw the film were not actually prepared for the impact phases, as they were not informed about the odor of the anesthesia or the sensations created by the anesthesia.

Parental responses to a post-hospital behavior questionnaire completed one week after discharge, and again one month after discharge, suggested that at the latter point, children who were prepared for anesthesia induction by seeing the movie were less upset than those not prepared. These differences were not immediately evident at the one-week follow-up (Vernon, 1973). The fact that there was no effect of preparation the week following the discharge and no effect of preparation during the actual anesthesia might be explained similarly. Both time periods involved some unexpected discomfort for the children, and this aspect of their hospitalization was not covered in the preparation. In short, the children who saw the movie may not have been adequately prepared for the distressing physical sensations associated with hospitalization.

An attempt to prepare the children for the broader hospital experience via filmed modeling was made by Melamed and Siegel (1975). Their film consisted of 15 scenes showing various events encountered by most children hospitalized for minor surgery. The child in the film described his feelings and concerns about each event, but ultimately completed each event in a nonanxious manner. Thus, the child model showed that he could cope with this frightening and difficult situation. Thirty children, between the ages of 4 and 12, saw the hospital film. In order to control for the possible calming effects of viewing a film of any

kind, a similar group of children saw a film that was unrelated in content to hospitalization. All of the children were later given the hospital's routine pre-operative preparation by the hospital staff.

Situational measures of anxiety were assessed pre-film, post-film, pre-operative, and three to four weeks after discharge. On all these measures (palmar sweat index, self-report of hospital fears, and observers' ratings of the child's anxiety), the children who saw the preparation film showed less anxiety prior to the operation and several weeks afater discharge than the children who saw the unrelated film.

Responses to a behavior problems checklist, completed by the mothers at the time of admission and again three to four weeks after discharge, indicated that children who viewed the unrelated film showed a significant increase in the degree of behavior problems from the pre- to post-hospital periods, whereas children who viewed the preparation film did not show this increase. Interpretation of the data is complicated by the fact that both children and their parents who were assigned to the unrelated film condition reported greater fear of the hospital at admission compared with those assigned to view the preparation film. These results suggest the possibility that some of the difference in behaviors may have been related to different degrees of initial anxiety in the parents and children.

Nonetheless, taken as a whole, these results suggest that viewing a filmed model coping with hospitalization, in conjunction with routine psychological preparation, reduces children's anxiety pre- and post-operative more than routine psychological preparation alone. Whether the film would be equally effective in the absence of routine pre-operative preparation is a question unanswered by this study.

Play Therapy

One reason to use the various forms of psychological preparation for children discussed thus far is to impart accurate information about hospital procedures. In contrast, the primary rationale for play therapy in the hospital is that permitting children to master a frightening experience in play beforehand will provide an outlet for their emotions and enable them to cope with their anxiety. Of course, a substantial amount of information may be conveyed in play sessions as well.

The earliest research on the effects of play therapy on hospitalized children was done by Cassell (1965). She studied 40

children between the ages of 3 and 11 who were admitted for cardiac catheterization. Half of the children were assigned to the experimental group. These children were given two periods of "brief puppet therapy," one the day before cardiac catheterization and one the day after. During both therapy sessions, the child and the therapist acted out the catheterization procedure. The therapist had the doctor puppet explain the procedures as he did each step. When the child and therapist reversed the patient-doctor roles, the therapist had the child puppet cry and complain during any frightening aspects of the procedure.

Based on a global mood rating made by the cardiologist, children given puppet therapy showed significantly less emotional disturbance during catheterization than children in the no-treatment group. Cassell does not report whether the cardiologist knew to which group the children had been assigned. This is a potential source of bias in the cardiologist's ratings. However, there was no difference between the two groups in terms of emotional disturbance observed on the ward the day following catheterization. Neither was there any group difference following hospitalization as indicated by the parents' responses to a questionnaire three days after discharge and again one month after discharge. In fact, the trend in both groups was toward less emotional disturbance following hospitalization. However, at the one-month follow-up, children given puppet therapy did express significantly more willingness to return to the hospital for further treatment.

Lockwood (1970) examined the effect of situational doll play on the pre-operative stress reactions of children between the ages of four and six. Degree of stress was determined by analyzing the stories children told in response to a projective test consisting of eight pictures depicting various hospital experiences (the "Hospital Picture Test"). Children given situational doll play took the role of either doctor or nurse and played with such hospital items as a stethoscope and tongue blades. The Hospital Picture Test was administered before and after the play session. These children were compared to children who received the same tests, but no play session. Situational doll play was not found to affect the pre-operative level of stress revealed in the children's stories. This form of therapy did not impart any new information to the child, and it may have been ineffective for that reason.

Evidence for the stress-reducing effects of play therapy is not as strong as it is for other forms of psychological preparation. Just as Visintainer and Wolfer (1975) found stress-

point preparation to be more effective than consistent supportive care alone, it may be that play therapy is more effective when it conveys preparatory information.

What You Can Do for a Child Going into the Hospital

The research reviewed here suggests that children's stress during hospitalization can be reduced by increasing their understanding of hospital procedures beforehand, by allowing them emotional expression of their feelings, and by providing them with emotional support from a nonanxious parent.

Petrillo (1972) has recommended that psychological preparation for hospitalization begin four to seven days before admission for children age four and older, and two to three days before admission for children two to three years of age. For children seven and older, discussion of hospitalization should begin a few weeks ahead, so that the children can be involved in the planning. Many of the following suggestions are variations of those made by Petrillo.

It is helpful in guiding psychological preparation to first determine beforehand the child's understanding of his physical problem and of the reason for his going to the hospital. Thus, any misconceptions can be clarified directly. Petrillo (1972) recommends probing a child's impressions even if she denies any knowledge by asking simple questions such as "What did the doctor say?" or "What did your parents tell you"?

Next, relatively simple explanations should be given to the child, with the amount of detail and level of sophistication geared to the child's age. Giving accurate information may require some research on the part of parents and teachers, e. g., finding out what tonsillectomies actually entail. It may be helpful to explain the child's condition in terms the child can visualize, perhaps using a doll or drawings. The child can be reminded of past visits to the doctor or tests that relate to the current problem. The child should be given some expectation of what is likely to happen to him in the hospital. Toys or models representing hospital equipment and doctor's tools may facilitate this understanding and can be used in play. Doll play may be especially helpful for younger children. Some hospitals, especially children's hospitals, have printed material available on what happens in the hospital. Talking about other children who went to the hospital and came home better may be helpful. In classrooms, encouraging a child to talk about her hospital experience may be beneficial both to that child and to other children who can use her as a model.

The child should be repeatedly reassured that no one is to blame for his hospitalization or his physical condition. Although it is not evident from the research reviewed here, it is not uncommon for young children to view painful medical procedures as punishment. Thus, it may be helpful to the child to be frequently reassured that nothing she has done contributed to her hospitalization, but that she has some physical problem that the doctor can correct. The child should be told the origin of her condition if this is known.

The child should probably be helped to anticipate as many aspects of his hospital experience as possible, including post-surgical or post-procedural events and feelings. Tell him, for example, he will have a sore throat or eye patches after the medical intervention. Accordingly, let him practice not being able to speak or see or move his legs, etc. Inform him as to whether a parent will stay overnight or when parents will be visiting. Be sure to tell the child when he may expect to go home.

Encourage the child to ask questions at every step, and ask the child simple questions yourself to be sure she comprehends your explanations.

Some children develop unfounded fears that body parts other than those involved in the surgery may be hurt. The child should be reassured that no other body part will be operated on. Petrillo (1972) recommends "playful repetition" for children age six and younger. In this game, the child is told something like this:

> This is where your operation will be, right here on your leg (for example). The doctors won't operate on any other part. (Then as you point to each body part, say) Not your head, not your face, not your arms, not your chest. . . . (etc.).

Some psychological preparation for receiving shots is probably a good idea. Petrillo suggests doing this at the end of any preparation session so the child is not upset or distracted while you are discussing the other aspects of hospitalization. Allowing young children to play at giving shots to dolls, to each other, or to you may help the child get used to the idea. The child can also practice holding still and may also practice talking about something else. Children should be told that the shots will hurt and that it is okay to cry.

Finally, it may cheer up the child to hear about the positive aspects of hospitalization -- having a lot to tell her friends and family afterwards, perhaps having visitors, etc. Promising the child a special treat, gift, or event after recovery might help, and incidentally convey to the child that she will, indeed, come home.

The day before admission, explain any special events such as fasting before surgery, and what will happen the next day. Describe the clothing worn by the doctors and nurses (caps, gowns, masks), and explain that the masks are to prevent the child's catching any germs. In surgical cases, explain that she will breathe a sweet smelling medicine from a mask (if that kind of anesthesia is to be used), and that she will be "taking a nap" during the operation. Assure the child that she will not wake up during the operation, that she will not feel anything, and that she won't remember it. Review prevous information, including shots.

One or both parents should always be present on the day of surgery to provide support and comfort to the child, and to tell the child they will be waiting for him. If the child is a preschooler, it is probably helpful for one parent to room in. Visiting should be frequent, and the child should know when the parent is leaving and returning. Separation from the family may be very frightening for the child. Bringing familiar toys to the hospital may be helpful. Parents should participate in the child's care whenever possible, and children age five and older should care for themselves as much as they can.

Parents should seek out emotional support for themselves as well as for their children. Asking questions of the hospital staff will increase their own understanding of the hospital routine and procedures. This may thus reduce their own stress and increase their ability to care for and support their child. Doctors and nurses should also be asked to explain procedures to the child before beginning. Children should be allowed to resume their normal activities as soon as feasible (e.g., dressing), and they should be encouraged to talk about and play out their hospital experience. Parents and teachers should try to be patient and sympathetic toward behavior problems that may appear following hospitalization.

Conclusions

Hospitalization is a stressful event for children, especially preschoolers. Parents and educators are in a position to

provide children with relevant information and emotional support, as well as to correct their misconceptions and allay their exaggerated fears. Research suggests that psychological preparation for children going into the hospital has the potential to reduce children's anxiety and affect their physiological states prior to and during medical procedures as well as help advance recovery and adjustment following a hospital stay. With help from others, hospitalization need not be a crisis in a child's life, and it may even be a growth experience for the child.

References

Bandura, A., Grusec, J. E., & Menlove, F. L. Vicarious extinction of avoidance behaviors. Journal of Personality and Social Psychology, 1967, 5, 16-23.

Cassell, S. Effect of brief puppet therapy upon the emotional responses of children undergoing cardiac catheterization. Journal of Consulting Psychology, 1965, 29, 1-8.

Goslin, E. R. Hospitalization as a life crisis for the preschool child: A critical review. Journal of Community Health, 1978, 3, 321-346.

Jessner, L., Blom, G. E., & Waldfogel, S. Emotional implications of tonsillectomy and adenoidectomy on children. The Psychoanalytic Study of the Child, 1952, 7, 126-169.

Lockwood, N. L. The effect of situational doll play upon the preoperative stress reactions of hospitalized children. American Nurses' Association Clinical Sessions, 1970, 113-120.

Mahaffy, P. R., Jr. The effects of hospitalization on children admitted for tonsillectomy and adenoidectomy. Nursing Research, 1965, 14, 12-19.

Melamed, B. G., & Siegel, L. J. Reduction of anxiety in children facing hospitalization and surgery by use of filmed modeling. Journal of Consulting and Clinical Psychology, 1975, 43, 511-521.

Petrillo, M. Preparing children and parents for hospitalization and treatment. Pediatric Annals, 1972, 1, 24-41.

Prugh, D. G., Staub, E., Sands, H. H., Kirschbaum, R. M., & Lenihan, E. A. A study of the emotional reactions of children and families to hospitalization and illness. American Journal of Orthopsychiatry, 1953, 23, 70-106.

Skipper, J. D., & Leonard, R. C. Children, stress, and hospitalization: A field experiment. Journal of Health and Social Behavior, 1968, 9, 275-287.

Vaughan, G. H. Children in hospital. Lancet, 1957, 272, 1117-1120.

Vernon, D. T. A. Use of modeling to modify children's responses to a natural, potentially stressful situation. Journal of Applied Psychology, 1973, 58, 351-356.

Vernon, D. T. A., & Bailey, W. C. The use of motion pictures in the psychological preparation of children for induction of anesthesia. Anesthesiology, 1974, 40, 68-72.

Vernon, D. T. A., Foley, J. M., Sipowicz, R. R., & Schulman, J. L. The psychological responses of children to hospitalization and illness. Springfield, ILL: Charles C. Thomas, 1965.

Visintainer, M. A., & Wolfer, J. A. Psychological preparation for surgical pediatric patients: The effect of children's and parents' stress responses and adjustment. Pediatrics, 1975, 56, 187-202.

Wolfer, J. A., & Visintainer, M. A. Pediatric surgical patients' and parents' stress responses and adjustment as a function of psychologic preparation and stress-point nursing care. Nursing Research, 1975, 24, 244-255.

TEACHING CHILDREN SOCIAL-COGNITIVE PROBLEM-SOLVING SKILLS: A REVIEW OF SELECTED STUDIES

Eugene S. Urbain and Philip C. Kendall

It seems reasonable to assert that a child's ability to solve the interpersonal problems of everyday living should be meaningfully related to psychological adjustment and positive mental health. Anyone who interacts with children on a day to day basis cannot help but be impressed with the marked differences among children in the ways they go about dealing with interpersonal conflict. Some children become passive and withdrawn in the face of conflict, while others act out their distress through impulsive and aggressive behavior (Achenbach, 1974). Still others, the more stress resistant or "invulnerable" children (Garmezy, 1979; Pines, 1979), seem to persist in problem-solving and to adapt positively in the face of severe life stress and conflict.

What are some of the problem-solving skills that might account for successful resolution of interpersonal problems, and how might such skills best be taught to children who have not mastered them? In an effort to answer these questions, we shall describe selected research on different approaches to teaching social-cognitive problem-solving skills to children. The term "social-cognitive" is used to emphasize the fact that the problem-solving approaches reviewed are concerned with children's cognitive processes (i.e., with how they think) when confronted with interpersonal conflict situations. We will examine: (a)

* Eugene Urbain, Ph.D. is a Staff Psychologist at Wilder Child Guidance Clinic, St. Paul.
Phillip Kendall, Ph.D. is a Professor of Clinical Psychology at the University of Minnesota.

studies of problem-solving training in the school and family context, (b) training in social perspective-taking (teaching children to assume the point of view of others in a social interaction), and (c) training in self-control.

Despite early theorizing about the importance of interpersonal problem-solving (Jahoda, 1953; 1958), it is only recently that the groundwork has been laid for more scientific research on the subject. D'Zurilla and Goldfried (1971) provide us with a working definition of interpersonal problem-solving:

> Problem-solving may be defined as a behavioral process . . . which (a) makes available a variety of potentially effective response alternatives for dealing with problematic situations, and (b) increases the probability of selecting the most effective response from among these various alternatives. (p. 108)

A number of abilities related to problem-solving have been the subject of recent research (e.g., Spivack, Platt, & Shure, 1976), of which the following are among the most prominent:

1. Problem identification: the processes by which a child learns to recognize the existence of a problem that needs to be solved, and to identify the actual nature of the problem by recognizing the important issues and facts involved.

2. Alternative thinking: the ability to generate multiple alternatives that are potential solutions in a given interpersonal problem situation.

3. Consequential thinking: the ability to foesee the immediate and long range consequences of a particular alternative and to use this information in the dicision-making process.

4. Means-ends thinking: the ability to plan a specific series of actions (a means) to reach a given goal. Also involved are the ability to recognize potential obstacles to a particular means, and the ability to think of a realistic time framework when planning a means.

5. Social perspective-taking (or role-taking): the ability to "take the role of the other" or take the other's point of view in a social interaction. This involves the ability to perceive correctly the feelings and thoughts of the other,

and to perceive the motives or causes of the other's behavior.

The problem-solving approach to therapy with children aims to remediate problems in social interaction by direct teaching of underlying problem-solving skills. This approach contrasts with more traditional psychoanalytically-oriented approaches to child therapy which place emphasis on releasing repressed emotions and uncovering unconscious motivations and drives. The problem-solving approach also contrasts with traditional behavior modification methods by which the therapist changes the reinforcements (rewards and punishments) in the external environment (see Combs & Slaby, 1977). While children's social behavior can be modified, at least on a short-term basis, through behavior modification, problem-solving therapies focus more on enhancing a child's thinking skills, i.e., his or her cognitive understanding of social problem situations and how to solve them. Of course, it is possible to reinforce or reward positive behavior at the same time one is trying to teach a child skills for cognitive problem-solving. In fact, researchers have recently begun to develop combined "cognitive-behavioral" training programs that integrate traditional behavior modification methods with training in cognitive skills (Meichenbaum, 1977; Kendall & Hollon, 1979).

The problem-solving approach to therapy reflects not only this increased interest in studying people's internal thinking processes (Mahoney, 1977), but also indicates a trend for therapists and researchers to be increasingly concerned with the role that peers, as well as parents and teachers, play in the social development of the individual child (Asher, 1978; Hartup, 1979). Although it is obvious that peers and other children are very important persons in a child's social environment, it is only in the last 10 years or so that their participation has been more systematically sought in remedial programs.

Because of the fact that parents and teachers have more extensive daily contact with a child and his/her peers than other adults, including therapists, it also seems likely that they are a powerful source of influence in the development of the child's social cognitive abilities. The problem-solving approach to therapy emphasizes the potential of parents and teachers to act in a therapeutic role by serving as models and by teaching important social-cognitive skills in the day-to-day problem situations that come up with children. As a result, the approach minimizes the traditional gap between what parents and teachers do with children in everyday life and what therapists do with children in their professional settings.

In the following pages, we will focus on the applications of social-cognitive treatment methods by teachers, therapists, and parents with children of different ages. The emphasis of our discussion is on studies that aim to teach children to apply general cognitive problem-solving strategies to their social behavior. We will not review studies that aim mainly at teaching a specific set of social behaviors (helping, cooperative or assertive behaviors, eye contact, conversation skills, etc.) without the emphasis on general problem-solving skills (see Combs & Slaby, 1977, for a review of such studies). While the problem-solving training approaches reviewed here clearly do involve teaching children specific behaviors they can use to cope with problem situations, the goal is to help children develop not only some new behaviors, but also certain general problem-solving strategies that they can apply to new problem situations that come up in day-to-day living.

Training in Interpersonal Problem-Solving

School Setting

There are now available several reports of efforts to train children in interpersonal cognitive problem solving (ICPS) skills in the school context (e.g., Allen, Chinsky, Larcen, Lochman, & Selinger, 1976; McClure, Chinsky, & Larcen, 1978; Spivack & Shure, 1974; Spivack, et al., 1976; Stone, Hinds, & Schmidt, 1975). The most extensive series of studies has been conducted by Spivack, Shure, and their associates at the Hahnemann Community Mental Health Center in Philadelphia (Spivack & Shure, 1974; Spivack, et al., 1976). These investigators have developed a series of programs for teaching interpersonal problem-solving skills to preschoolers, school-aged children, adolescents, and adults. The preschool program (Spivack & Shure, 1974) is presented in a sequence of 46 daily sessions, 20-30 minutes each, consisting of lessons, activities, and games conducted by the teacher in the preschool classroom. The program initially involves teaching a number of language concepts seen as prerequisites for instruction in problem-solving (such as "if-then" and "same-different") and teaching the ability to recognize and identify basic emotions (e.g., happy, angry, sad). The remaining portion of the program is divided into three sequential units: (a) teaching enumeration of alternative solutions, (b) teaching enumeration and awareness of consequences, and (c) teaching children to pair specific solutions with their specific consequences. These skills are taught by presenting the children with a series of hypothetical social problem situations (for example, a boy wants a girl to let him feed the animals),

followed by asking such questions as "What else could this person say or do to solve this problem?" (generating alternatives), and "What might happen next if he/she does that?" (enumerating consequences). Extensive use is made of teacher demonstration and puppet play to illustrate the concepts being learned, and whenever possible the problem-solving methods are applied to actual problems that arise among the children in the classroom.

The results of the problem-solving training indicated that the children who participated in the program showed significant improvement on measures of alternative and consequential thinking as well as on ratings of behavioral adjustment, relative to a control group of children that did not receive the program. A strong improvement effect was also maintained at a follow-up one year later when children were rated by new teachers. The authors also report strong positive results at the conclusion of a similar training program adapted for use with kindergarten children (reported in Shure & Spivack, 1978).

These studies are quite encouraging, although some caution is necessary in interpreting the results. In the first place, since the trained group of children was compared with a control group who received no treatment, it is hard to determine how much improvement was actually due to the specific training methods and how much was due to more general factors such as special adult attention and motivation of the teachers and children to participate in a special school program. In the future, it would be helpful to compare a group trained in problem-solving with a group participating in some other kind of special activity or even a different kind of training program (see O'Leary and Borkovec, 1978, for a discussion of control groups). Secondly, it is difficult to determine from these studies which of the problem-solving skills might be most important for therapeutic change. Was the improvement due to training in alternative thinking, consequential thinking, recognizing feelings, or language concepts -- or to the combination of all these skills, as implied by the authors? More studies will be needed to look at the relative importance of each of these training ingredients.

Using a similar problem-solving model (see also D'Zurilla & Goldfried, 1971), Larcen (reported in Allen et al., 1976) developed a training program for third and fourth grade children in an elementary school setting. Sessions were conducted by the classroom teacher, and a total of 24 30-minute sessions were held over a period of 18 weeks. The intervention made use of modeling, in which the child could learn by observing and imitating the behavior of the teacher and peers, and role-play, in

which the subjects would play-act different situations and practice newly learned social skills. Exercises were included for teaching divergent thinking skills (for example, brainstorming many alternative uses for a common object), problem identification (the teacher helped children to clarify the problem in a set of unfinished problem stories), thinking of alternative solutions to problems, consideration of consequences, and step-by-step elaboration of different solutions. Alternative solutions and consequences were discussed for interpersonal problems that commonly arise in school, and children were encouraged to give feedback to one another about the effectiveness of various solutions that were generated.

The results of the Larcen's program indicated that the trained children improved over a non-trained control group on a test measuring problem solving thinking. They also improved on a test of locus of control, indicating increased feelings of personal control over the environment ("internal" locus of control) in contrast to the feeling that events in the external environment are controlled by luck, chance, or fate ("external" locus of control). However, despite these improvements on tests of problem-solving thinking, no effect of training was evident on teachers' ratings of actual classroom behavior (Walker Problem Behavior Checklist) or on a measure of peer acceptance. Whether the lack of improvement in classroom behavior was due to the insensitivity of the measures, to the intractability of behavior problems among nine-year-olds, or to the weakness of the intervention is not known.

McClure et al. (1978) tested a variation of the Larcen training program with third and fourth grade children. Three alternative conditions were used to teach interpersonal problem-solving: modeling by means of videotape only, videotape modeling plus group discussion, and videotape modeling plus role-played exercises. The fourth condition was a no treatment control group. McClure et al. (1978) found that the three training conditions generally led to enhanced internal locus of control and to improved performance on a measure of problem-solving thinking requiring the generation of alternative solutions and means-ends thinking. In contrast with Larcen's results, the problem-solving training groups also showed more problem-solving responses on an observation measure of actual peer interaction involving group decision-making. The videotape plus role-play group performed most competently on this measure, suggesting that training that combines both observational learning (modeling) and behavior rehearsal (role play) is more likely to transfer to real-life social interactions than either

of these techniques alone. What might be some reasons for the discrepancy between this study and the study of Larcen in which there was no incidence of carry-over of training to the classroom? The most likely explanation lies in the fact that McClure et al. and Larcen used quite different measures of social behavior. Larcen used a teacher checklist of school problem behaviors, while McClure measured problem-solving responses in a special group situation set up for the purposes of the experiment. Children's behavior might be quite different in such an experimental situation than in other situations more commonly observed by the teacher (on the playground, in the classroom, lunchroom, etc.). Another possibility is that the behavior of the children in Larcen's study might have actually shown some positive changes (as they did in McClure et al.'s study), but that the problem checklist was not a sensitive enough measure to pick up the changes. Finally, it is possible that McClure et al. and Larcen's training methods were sufficiently different to account for the different results.

Family Setting

Since human beings learn a great deal about interpersonal behavior from experiences within their own family, the family system provides a logical focus for social-cognitive therapy interventions. Moreover, inasmuch as the family unit is the context in which many important interpersonal problems arise, it is reasonable to propose that facilitating family problem-solving strategies will have an impact on individual adjustment.

Shure and Spivak (1978) have recently adapted their problem-solving training programs for use with mothers and their preschool children. Their training program consists of 43 suggested daily lessons and activities in which mothers are guided in teaching interpersonal problem-solving skills to their four-year-olds at home. As with the school-based training program of these investigators, the home-based training led to subsequent increases in alternative and consequential thinking skills in the experimental children over a no treatment control group. The trained children also improved significantly on ratings of behavior (e.g., withdrawal, impulsiveness) completed by their preschool teachers, who were unaware of which of the children were trained and which were untrained (control) subjects.

Alexander and Parsons (1973) and Parsons and Alexander (1973) have reported on the effectiveness of a short-term intervention aimed at teaching social problem-solving to the families

of delinquents. The objectives of training were to develop: (a) clear communication of information as well as feelings among family members, (b) clear presentation of demands and alternative solutions, leading to (c) negotiation and comprise (Alexander & Parsons, 1973). Families were seen in two therapy sessions per week for a period of four weeks.

In the first study (Alexander & Parsons, 1973), the treatment group was superior to a no treatment control group of the families that did not participate in training, and to two other short-term family therapy approaches. In the second study, (Parsons & Alexander, 1973), the treatment group was superior to a no treatment control group and to a discussion group that focused primarily on the expression of feelings by family members without a specific problem-solving emphasis.

The program led to significant improvement over the control groups on family interaction measures based on videotaped observations of the families during a problem-solving disussion. More specifically, the family interaction measures were aimed at measuring activity level (silences, frequency and duration of simultaneous speech), as well as verbal reciprocity (equality of verbalization). A follow-up study conducted two and one-half to three and one-half years after the training (Klein, Alexander, & Parsons, 1977) indicated that the problem-solving intervention group continued to show a reduced rate of delinquent behavior compared with the control group. Further, the siblings of the trained children also showed levels of court involvement one-third to one-half below the control groups, suggesting that children in the family other than the target delinquent had benefited from the training.

Robin, Kent, O'Leary, Foster, and Prinz (1977) have reported on a problem-solving training program used with mother-adolescent pairs in which the pairs had reported high levels of disagreement and conflict. Four basic steps of the problem-solving model of D'Zurilla & Goldfried were taught:

1. Defining the problem included pinpointing specific parent and adolescent behaviors that made a particular subject a source of disagreement.

2. Listing the solutions included generating as many alternatives for resolving the disagreement as possible.

3. Evaluation of options included a review of the positive and negative consequences of each alternative, culminating in a negotiated agreement.

4. Planning the implementation of a solution consisted of deciding on the logistic details for carrying out a particular decision. (Robin et al., 1977, p. 641)

During the treatment, therapists also helped the parent-child dyad to self-monitor negative communication patterns (teasing, put downs, interrupting, sarcasm, lack of eye contact) and to replace these with effective communication (reflective listening, visual and postural attention, and appropriate voice tone). Treatment involved five one-hour sessions. Modeling by the therapists, guided practice, role-playing, feedback, and social reinforcement were used to teach the problem-solving and communication skills. The treatment produced highly significant increases over a no treatment control group in problem-solving behavior during discussions of hypothetical and real-life family problems audiotaped in the therapy setting.

A checklist was also completed by parents and adolescents asking them to rate the quality and frequency of problem-solving behaviors, communication skills, and specific conflicts at home. The checklist data showed inconclusive results, which may be due to the insensitivity of the checklist to changes or to the actual failure of the treatment effects to generalize to the home environment. If, in fact, the subjects learned problem-solving methods in the therapist's office but did not successfully apply them at home, the question arises as to why this might be the case. One possibility is that there are more "interfering" factors at home (presence of other untrained family members, pressure of daily activities, etc.), which prevent the successful application of problem-solving methods in the absence of the therapist's supervision. Should this be the case, it will be necessary for the therapist to search with the family for the obstacles to home implementation, and to develop ways to overcome them. It might also be necessary for the therapist to make occasional home visits to assist with implementation of the program.

The studies we have reviewed in this section suggest that the problem-solving approach to adjustment holds some therapeutic promise. We still need to know more about which problem-solving skills are particularly important for children of different ages, as well as about the way in which cognitive skill deficits lead to the specific kinds of problem behaviors observed by parents and teachers (aggression, withdrawal, etc.). From the therapist's standpoint, the application of problem-solving methods in the family context is particularly intriguing in terms of its implication for children's later adjustment.

Training in Social Perspective-Taking

The studies reviewed in this section overlap in training content with those we have just discussed. However, the focus of training is directed more specifically towards one essential aspect of the problem-solving process: social perspective-taking, or the ability to "take the role of the other" (Mead, 1934) and to understand the other person's point of view.

The basic rationale for this concern is that children, as they develop, emerge from a relative state of "egocentrism" (Piaget, 1970), in which they have difficulty accurately differentiating their own internal emotional states, thoughts, and perceptions from those of other persons, into a state in which they can understand the point of view of another. These skills, in turn, are probably related to other problem-solving abilities. In general, knowledge of the feelings, thoughts, and motives of others is likely to aid a child in efforts to solve particular interpersonal problems. For example, perspective-taking (or role-taking, as it sometimes called) seems important for accurate recognition that a problem exists and for identifying the important issues involved in the problem (Kendall & Urbain, in press). In addition, perspective-taking ability may affect the number and quality of alternative solutions a child is able to generate in a particular problem situation (Shure & Spivack, 1978). However, just knowing about the thoughts and feelings of others is probably not enough to completely solve a problem -- a child must be able to use this information to generate alternative solutions and plan a specific means of dealing with the problem (and any obstacles that come up). The reader is referred to Shantz (1975) for an excellent review of perspective-taking theory and research up to 1975.

A number of studies have been conducted to investigate the effects of perspective-taking training (see Kendall & Urbain, in press, for a detailed review). Van Lieshout, Leckie, and Smits-Van-Sonsbeek (1976) have reported on the effectiveness of a training program to enhance social role-taking skills in preschool children. The experimental program was conducted in daily 30-minute sessions by the nursery school teacher over a total of 18 weeks. The no treatment control group was a nursery school program without the special perspective-taking training. Children in the training group discussed the feelings of others in stories and puppet play, role-played various situations, and were socially reinforced for being helpful and altruistic toward others in class. The results indicated that although the treat-

ment did not produce a significant effect for the five-year-olds, trained three- and four-year-old children showed significantly higher scores on a battery of role-taking tests relative to the control group. It may be that the tests and training procedures were appropriate only for use with the younger subjects. Unfortunately, actual behavior (e.g., cooperation, aggression) was not measured in this study.

Iannotti (1978) examined the effects of role-taking training on a series of measures of cooperation and aggression. The subjects were 30 normal six-year-old boys and 30 normal nine-year-old boys. The children met in groups for 25 minutes daily for 10 days. There were two experimental conditions: (1) role taking -- in which a situation was role-played, after which the experimenter asked questions about the motives, thoughts, and feelings of the different characters; and (2) role switching -- in which a social skit was replayed until each child had assumed the role of every character in the role-play, with discussion emphasizing the experience of changing perspective (i.e., "What would you do, or feel, if you were x?" "Why do you think x did that to you?"). A control group met for an equal amount of time and discussed stories without an emphasis on role-taking. Both training procedures led to increases in cooperation and altruism on a set of experimental tests. However, no changes appeared on a measure of aggression requiring children to describe how they would act in hypothetical social situations (such as being pushed out of line). It may be that training in role-taking can lead to increased cooperative behavior without affecting the level of aggressive behavior. In addition, no treatment effect was evident on a measure of empathy, which assessed the degree to which a child matched his/her own feelings to the feelings of a character in a series of picture stories. It is difficult to explain this finding, although it may be related to the difficulties involved in the definition and accurate measurement of empathy.

Elardo and Caldwell (1976) have reported on the effects of a year-long social development curriculum with fourth and fifth grade elementary school students. A published manual (Elardo & Cooper, 1977) is available for the program, termed Project AWARE. The project includes training components to facilitate both social perspective-taking (identifying emotions, thoughts and feelings of self and others, and developing acceptance of individual differences among people) and problem-solving abilities (formulating alternatives to social conflicts through role-play, and discussing the consequences of each option and the thoughts and feelings of all the people involved).

Two 25-minute sessions were held on a weekly basis for six or seven months and were led by trained classroom teachers (initially one of the investigators helped the teacher run the sessions). The outcome data indicated that the program led to increased scores for trained children over the no treatment controls on measures of role-taking, alternative thinking, and classroom adjustment measured by the Devereux School Behavior Rating Scale. One problem with this study is that the teachers who rated the trained children might have been biased towards reporting positive results, since they were involved in the training.

A frequently cited study of perspective-taking training with somewhat older children was reported by Chandler (1973). In this study, training of role-taking skills was conduted with 15 chronically delinquent boys ages 11 to 13. The children met daily for three hours during a 10 week summer period; they were paid for their participation. Training involved the boys in writing and videotaping role-played skits of events involving peers. Each skit was replayed a number of times with the players' roles switched, until each boy had played the role of each of the characters in the skit. Videotapes of the skits were reviewed at the end of each set in an effort to determine ways of improving them. The participating children were thus involved in an exercise in which they had a chance to experience the same interpersonal event from several different perspectives and also to hear criticism of the interaction from their peers.

Relative to a control group of children who received no treatment and to another control group who watched animated and documentary films, results revealed that the trained children improved significantly on a measure of social-cognitive role-taking ability. These boys also showed significantly lower rates of delinquency during the one and one-half years following training.

In another study by Chandler, Greenspan and Barenboim (1974), role-taking training also led to improved scores on a role-taking test for a group of institutionalized emotionally disturbed youngsters. There was no overall improvement on ratings of actual behavior for the group as a whole. However, some individual children did appear to improve in their behavior, while others did not change or had even gotten worse (the treatment was simply not effective for these children). Those who improved most in role-taking (i.e., those for whom the treatment was effective) also showed the largest improvements in behavior.

The result of these training studies generally indicate that cognitive perspective-taking skills can, in fact, be taught to children. However, even though a child might be able cognitively to "take the role" of another person, this does not guarantee that he/she will necessarily apply this skill in a particular problem situation. As parents and practitioners are often aware, there is, at times, a considerable difference between what a child is capable of doing and what he/she actually does in a situation. Researchers will need to look more carefully at what can "go wrong" in the process of translating thinking about others (perspective-taking) into actual problem-solving behavior in a real-life problem situation. As we learn more about how the perspective-taking process operates in real-life social situations (for example, in family interactions), we will be able to develop better remedial programs for children showing deficits in these areas of social and emotional development.

Social Problem Solving and Self-Control

There is now a fairly extensive literature concerning the development of "verbally-mediated" self-control in children, i.e., the process by which a child's own internalized language comes to regulate his/her own external behavior (Luria, 1961; Vygotsky, 1962; Kohlberg, Yaeger, & Hjertholm, 1968; Jensen, 1971). Consider, by way of example, the child who frequently interrupts others or is often distracted from schoolwork in class. One reason for this lack of self-control may be that the child doesn't use private or silent speech to regulate behavior by, for example, saying to him/herself, "I need to stop and think and keep doing my work. If I start talking when others are working it makes it hard for them to work."

This cognitive capacity for self-regulating one's own behavior develops rapidly in middle childhood around ages seven to ten (Jensen, 1971) and is likely to be an essential step in developing later independence and mature self-control. Reasoning that impulsive, hyperactive, and/or aggressive children may show some deficit in the development of this normal process of self-control through language, several investiagors have developed training approaches to remidiate this deficit (see Kendall & Finch, 1979; Kendall & Urbain, in press). The approaches to be illustrated involve the use of verbal self-instructional methods aimed at teaching a child to verbalize to him/herself appropriate strategies for going about solving a variety of academic and interpersonal problems.

In a classic paper, Meichenbaum and Goodman (1971) developed an intervention strategy to teach verbally mediated self-control

to 15 hyperactive and disruptive boys (ages seven to nine) in a remedial elementary school classroom. While the treatment program was not aimed specifically at remediating social behavior problems, it does provide a good illustration of the use of self-instructional methods to enhance self-control over disruptive behavior in children. The children met for four one-half hour treatment sessions over a two week period. The remedial approach involved explicitly teaching the children appropriate strategies of self-talk, using the following sequence:

1. An adult model performed a task while talking to himself out loud.

2. The child performed the same task under the external direction of the model's instructions.

3. The child performed the task while instructing herself aloud.

4. The child whispered the instructions to himself as he went through the task.

5. The child performed the task silently while guiding her performance using her own inner speech (from Meichenbaum & Goodman, 1971; see also Kendall, 1977).

The self-instructions included statements aimed at identifying the problem, planning a solution, coping with mistakes, and providing self-reinforcement for efforts to solve the problem. The authors give the following example of the model's verbalizations which a child subsequently used (first aloud, then silently) for problem solving on a series of academic tasks:

> Okay, what is it I have to do? You want me to copy the picture with the different lines. I have to go slow and be careful. Okay, draw the line down, down, good; then to the right, that's it; now down some more and to the left. Good, I'm doing fine so far. Remember, go slow. Now back up again. No, I was supposed to go down. That's okay. Just erase the line carefully ... Good. Even if I make an error I can go on slowly and carefully. Okay, I have to go down now. Finished. I did it. (p. 117)

Results showed the effectiveness of the method in developing a more cognitively reflective approach to school-like tasks in

the trained subjects over control children. This led to their improved scores on a series of non-social educational tasks including: a maze test, requiring a child to solve a series of pencil and paper mazes; the Matching Familiar Figures Test, which requires the child to look at a series of similar pictures and choose the one that exactly matches a model; and WISC-Performance IQ. A follow-up one month later revealed that this improvement in the trained group was maintained. However, the training did not produce improvement on observations of inattentive classroom behavior or on teacher ratings of self-control, activity level, or cooperation. Evidently the training in self-control on academic tasks did not generalize to other kinds of behavior in the classroom, including social behavior.

Camp, Blom, Herbert, and Van Doorninck (1977) have subsequently adapted the self-instructional methods more specifically to the remediation of social behavior problems. They have developed a program entitled "Think Aloud" for young aggressive children of elementary school age (Bash & Camp, 1975). The program was initially tested with second grade boys selected on the basis of their aggression scores on the Miller School Behavior Checklist. Twelve children received the special training. Children met for daily, 30-minute sessions, over a period of sex weeks. Treatment involved self-instructional practice on a variety of both social and nonsocial problem tasks. The social tasks were adapted from the activities used by Spivack and Shure (1974) to provide practice in: identifying basic emotions (happy, sad, mad, scared); generating behavioral alternatives to problem situations; and considering what might happen next in those situations. The nonsocial tasks included coloring shapes, puzzles, mazes, matching figures, etc. Throughout the training period, the teacher modeled cognitive strategies using the following four basic self-statements: "What is my problem?", "What is my plan?", "Am I using my plan?", and "How did I do?". To engage the children at first in the process of rehearsing self-instructions, a "copycat" game was used in which the children repeated out loud the self-statements modeled by the teacher. The general problem-solving approach was also applied to conflicts and problem situations that arose naturally among the children in the course of training. Following the program, the teachers rated the trained boys as showing a larger number of prosocial or cooperative behaviors in contrast to a group of untrained aggressive boys. The trained groups and the control group both showed improvement in aggression, so this improvement presumably was not due to the treatment. On the cognitive test battery, the trained children showed improvement over the control group on several measures, including the WISC-R mazes and decision time on the Matching Familiar Figures Test. However, the

trained children did not improve on a measure of reading achievement.

The self-instructional methods discussed here seem to offer considerable promise for children with a variety of impulsivity or self-control problems. The most serious drawback of these studies is the fact that the training effects often don't generalize to other situations and tasks outside of the training situation (Meichenbaum, 1979; Kendall, 1977). For example, a child may learn how to generate alternatives to solve a problem when with the adult trainer, but then fail to apply the techniques on the playground or in the classroom. Researchers will need to look at the reasons for this lack of generalization when it occurs and to develop methods for overcoming this problem. We also need to know more about what types of problems are best suited for treatment with self-instructional mthods. There are probably different reasons why children show impulsive behavior: one child may be impulsive when angry or frustrated while another may act impulsively simply because of distractibility and forgetting to "stop and think" first. Children may also be impulsive at some times and not others. A child may be impulsive or aggressive socially with peers, for example, but not with adults. The types of academic and interpersonal problems that are likely to improve with this kind of training need to be specified more clearly.

Conclusions

The literature on the training of social-cognitive abilities in children offers some encouraging evidence of therapeutic effectiveness, although some equivocal findings also appear in the literature (see Kendall & Urbain, in press). There is evidence that these training programs can enhance problem-solving strategies and perspective-taking skills in school and family settings. However, the general lack of long-term follow-up assessments (with the exception of Chandler, 1973; Spivack, Platt & Shure, 1976; and Klein, Alexander, & Parsons, 1977) limits the conclusions we can draw at present about the long-term impact of these programs on children's overall social development. Future studies would benefit from including such follow-up assessments, as well as from a greater use of "attention control" groups, i.e., groups in which subjects receive the special therapist attention without the special training program. Such control groups are necessary if we are to demonstrate the specific importance of the social-cognitive training methods themselves above and beyond the effect of general factors such as special adult attention and expectancy for change. It would also be valuable

to compare the effects of one training program to another alternative program, instead of just to a no treatment control group as is often done. It is otherwise hard to determine which approach is in fact, most effective for children with a particular kind of problem.

There are some important similarities among the diverse training approaches that we have reviewed. In general, the studies were all directed toward teaching children the cognitive skills that facilitate problem-solving in social situations. Interpersonal problem-solving training, training in communication and negotiation skills, self-control training, and training in the taking of others' perspectives are all considered here to fit within the general rubric of "social-cognitive problem-solving training". While differing in theoretical background, the great majority of studies are based on the hypothesis that children can best learn social-cognitive problem-solving skills by observing and imitating someone who is already skilled in these areas (parent, teacher, therapist, or a skillful peer) and by practicing newly taught social skills through role-playing.

There is also considerable overlap of training content across the various training approaches. For example, studies of perspective-taking training often describe the generation of alternative solutions as a component of training (e.g., Elardo & Cooper, 1977). This fact is not surprising, given that the resolution of real-life interpersonal problems probably involves an interaction of many of these different skills (even though more or less of one skill might be required in a particular situation). Future studies would benefit from an emphasis on trying to sort out the particular skills or "active ingredients" responsible for therapeutic changes in programs that teach a variety of skills.

One major issue to be addressed by future researchers is the problem of ensuring the transfer or generalization of what is learned in the treatment situation to other settings in the child's environment (for example, from the therapist's training room to the classroom or playground). As suggested by Meichenbaum and Asarnow (1979) and Kendall (1978), an important step would be to include more intensive procedures for generalization of treatment effects in the main body of the treatment programs. One way to do this would be to supplement cognitive problem-solving training with behavioral reinforcement methods in the classroom, during which teachers could reinforce children with praise and/or other rewards when they see a child actually using the newly learned skills in the classroom. Such a combined

cognitive-behavioral approach would represent a more systematic effort to deal with both the cognitive processes and behavioral procedures that are involved in therapeutic change (Kendall & Hollon, 1979).

Another reason that researchers often fail to find generalization of training effects may be due to the short-term nature of many of these studies (often between four to twelve sessions). Even with appropriate treatment methods, it may take considerable time to produce enduring changes in some types of behavior, particularly when it comes to changing established patterns of maladaptive interpersonal behavior such as aggression-impulsivity (Urbain & Kendall, 1979). With more severe forms of disturbance, longer treatment periods may be necessary. Researchers, as well as teachers and parents, may be vulnerable at times to the wish for a quick and simple solution to treating longstanding problems.

Future research will have much to tell us about the exact nature of the relationships between the different social-cognitive skills we have described. We also know very little about why some children lack effective problem-solving skills, while others excel in problem-solving in the face of life stress. What experiences in a child's family, school, and culture lead to the development of effective problem-solving skills? Do factors in a child's own temperament -- in his/her own genetic and neurological make-up -- play an important role? The development of perspective-taking skills in the context of family interaction, for example, would appear to be a critical area of research investigation. It is our belief that the future will bring an increased particpation of teachers and parents in scientific research aimed at understanding the development of social problem-solving and in developing programs for the early prevention and remediation of maladjusted interpersonal behavior among children.

References

Achenbach, T. M. Developmental Psychopathology, New York: Ronald Press, 1974.

Alexander, J. F. & Parsons, B. V. Short-term behavioral intervention with delinquent families. Journal of Abnormal Psychology, 1973, 81, 219-255.

Allen, G., Chinsky, J., Larcen, S., Lochman, J. E., & Selinger, H. Community psychology and the schools: A behaviorally oriented multilevel preventive approach. New Jersey: Lawrence Erlbaum Associates, Publishers, 1976.

Asher, S. R. Children's peer relations. In M. E. Lamb (Ed.), Sociopersonality Development. Holt, Rinehart, & Winston, 1978.

Bash, M., & Camp, B. Think aloud program: Group manual. Unpublished manuscript, University of Colorado School of Medicine, 1975.

Camp, B., Blom, G., Herbert, F., & Van Doorninck. "Think Aloud": A program for developing self-control in young aggressive boys. Journal of Abnormal Child Psychology, 1977, 5, 157-168.

Chandler, M. Egocentrism and antisocial behavior: The assessment and training of social perspective-taking skills. Developmental Psychology, 1973, 9, 326-332.

Chandler, M., Greenspan, S., & Barenboim, C. Assessment and training of role-taking and referential communication skills in institutionalized emotionally disturbed children. Developmental Psychology, 1974, 10, 546-553.

Combs, M. L., & Slaby, D. A. Social skills training with children. In B. Lakey and A. Kaydin (Eds.), Advances in child clinical psychology, (Vol. 1). New York: Plenum Press, 1977.

D'Zurilla, T., & Goldfried, M. Problem solving and behavior modification. Journal of Abnormal Psychology, 1971, 78, 107-126.

Elardo, P. T., & Caldwell, B. M. The effects of an experimental social development program on children in the middle childhood period. Unpublished manuscript, University of Arkansas at Little Rock, 1976.

Elardo, P. T., & Cooper, M. Project Aware: A handbook for teachers. Menlo Park, CA: Addison-Wesley, 1977.

Garmezy, N. Studies of stress-resistant children and adults. Research grant proposal, 1979.

Hartup, W. W. Peer relations and the growth of social competence. In M. W. Kent and J. E. Rolf (Eds.), The primary prevention of psychopathology. Vol. 3: Promoting social competence and coping in children. Hanover, N.H.: University Press of New England, 1979.

Iannotti, R. J. Effect of role taking experiences on role taking, altruism, empathy, and aggression. Developmental Psychology, 1978, 14, 119-124.

Jahoda, M. The meaning of psychological health. Social Casework, 1953, 34, 349-354.

Jahoda, M. Current concepts of positive mental health. New York: Basic Books, 1958.

Jensen, A. R. The role of verbal mediation in mental development. Journal of Genetic Psychology, 1971, 118, 39-70.

Kendall, P. C. On the efficacious use of verbal self-instructional procedures with children. Cognitive Therapy and Research, 1977, 1, 331-341.

Kendall, P. C. Self-instructions with children: An analysis of the inconsistent evidence for treatment generalization. Address presented to the Second National Conference on Cognitive Behavior Thereapy Research, New York, October, 1978.

Kendall, P. C. & Finch, A. J. Developing nonimpulsive behavior in children's cognitive-behavior strategies for self-control. In P. C. Kendall and S. D. Hollon (Eds.), Cognitive-behavioral interventions: Theory, research, and procedures. New York: Academic Press, 1979.

Kendall, P. C., & Hollon, S. D. Cognitive behavioral interventions: Overview and current status. In P. C. Kendall & S. D. Hollon (Eds.), Cognitive-behavior interventions: Theory, research, and procedures. New York: Academic Press, 1979.

Kendall, P. C., & Urbain, E. Social-cognitive approaches to therapy with children. In J. Lachenmeyer & M. Gibbs (Eds.), Psychology of the abnormal child. New York: Gardner Press, in press.

Klein, N. C., Alexander, J. F., & Parsons, B. V. Impact of family systems intervention on recidivism and sibling delinquency: A model of primary prevention and program evaluation. Journal of Consulting and Clinical Psychology, 1977, 45, 469-474.

Kohlberg, L., Yaeger, J., & Hjertholm, E. Private speech: Four studies and a review of theories. Child Development, 1968, 39, 671-690.

Luria, A. The role of speech in the regulation of normal and abnormal behavior. New York: Liveright, 1961.

Mahoney, M. Reflections on the cognitive-learning trend in psychotherapy. American Psychologist, 1977, 32, 5-13.

McClure, L., Chinsky, J., & Larcen, S. Enhancing social problem-solving performance in an elementary school setting. Journal of Educational Psychology, 1978, 70, 504-513.

Mead, G. H. Mind, self, and society. Chicago: University of Chicago Press, 1934.

Meichenbaum, D. Cognitive-behavior modification: An integrative approach. New York: Plenum Press, 1977.

Meichenbaum, D. Cognitive-behavior modification newsletter, Number 4, 1979.

Meichenbaum, D., & Asarnow, J. Cognitive behavior modification and metacognitive development: Implications for the classroom. In P. C. Kendall and S. D. Hollon (Eds.), Cognitive-behavioral interventions: Theory, research and procedures. New York: Academic Press, 1979.

Meichenbaum, D., & Goodman, J. Training impulsive children to talk to themselves: A means of developing self-control. Journal of Abnormal Psychology, 1971, 77, 115-126.

O'Leary, K. D., & Borkovec, T. D. Conceptual, methodological, and ethical problems of placebo groups in psychology research. American Psychologist, 1978, 33, 821-830.

Parsons, B. V. & ALexander, J. F. Short-term family intervention: A therapy outcome study. Journal of Consulting and Clinical Psychology, 1973, 41, 195-201.

Piaget, J. Piaget's theory. In H. P. Mussen (Ed.) Carmichael's Manual of Child Psychology, Vol. I. New York: Wiley, 1970.

Pines, M. Superkids. Psychology Today, 1979, 12, 53-64.

Robin, A. L., Kent, R., O'Leary, D., Foster, S., & Prinz, R. An approach to teaching parents and adolescents problem-solving communication skills: A preliminary report. Behavior Therapy, 1977, 8, 639-643.

Shantz, C. V. The development of social cognition. In E. M. Hetherington (Ed.), Review of Child Development Research, (Vol. 5) Chicago: University of Chicago Press, 1975.

Shure, M. B., & Spivack, G. Problem-solving techniques in childrearing. San Francisco: Jossey Bass, 1978.

Spivack, G., & Shure, M. B. Social adjustment in young children. San Francisco: Jossey-Bass, 1974.

Spivack, G., Platt, J., & Shure, M. B. The problem-solving approach to adjustment. San Francisco: Jossey-Bass, 1976.

Stone, G., Hinds, W., & Schmidt, G. Teaching mental health behaviors to elementary school children. Professional Psychology, 1975, 6, 34-40.

Urbain, E. S., & Kendall, P. C. Interpersonal problem-solving, social perspective-taking, and behavioral contingencies: A comparison of group approaches with impulsive-aggressive children. Manuscript submitted for publication, University of Minnesota, 1979.

Van Lieshout, C., Leckie, G., & Smits-Van-Sonsbeek, B. Social perspective-taking training: Empathy and role-taking ability of preschool children. In K. F. Riegel and J. A. Meacham (Eds.) The developing individual in a changing world, Vol. II. Chicago: Aldine, 1976.

Vygotsky, L. Thought and language. New York: Wily, 1962.

ADULTS AS AGENTS IN THE CHILD'S PERCEPTION OF THE SELF

Ruth G. Thomas

Introduction

Teachers and parents generally hope to see the children for whom they are responsible develop healthy personalities and learn to view themselves as worthy human beings. These are particularly challenging goals when children are less competent then their age-mates in dealing with their environment or when they think they are less capable then their abilities indicate. This review of research presents some background information about self-concept and related factors and illustrates strategies teachers and parents can use to help children develop positive views of themselves as persons.

Self-concept is defined as the way individuals perceive themselves and their behavior and their opinions of how others view them (Calhoun, Warren, & Kurfiss, 1976). It also typically includes the valuation that an individual places on those characteristics that the individual attributes to himself or herself (Calhoun & Morse, 1977; Cobb, 1961; Combs, Soper, & Courson, 1963; Rogers, 1947). For example, a person may feel that she is aggressive. If that person values aggression highly her self concept will be different than if she attributes low value to aggression.

Children's self-concept is a significant concern for teachers and parents because of its relation to other factors, including personality development (Felker, 1974), social adjustment (Lecky, 1945; Lewin, 1935; Martire, 1956; Rogers, 1959;

* Ruth Thomas, Ph.D. is Head of the Division of Home Economics Education, Department of Vocational Technical Education, at the University of Minnesota.

Snygg & Combs, 1949; Steiner, 1957), academic achievement (Barr & Jones, 1958; Brookover, Thomas, & Patterson, 1964; de Groat & Thompson, 1949; Rogers, Smith, & Coleman, 1978), classroom behavior (Shiffler, Lynch-Sauer, & Nadelman, 1977), and affective responses (August & Felker; 1977; August, Rychlak, & Felker, 1975). However, whether a good self-concept causes one to succeed, or is itself caused by success, is a major question. In the past, the latter position has been dominant in the literature (Calsyn & Kenny, 1977; Mead, 1956). More recent research has suggested that relations between behavior and concepts regarding the self are, at least in part, reciprocal; that is, our concept of ourselves sometimes causes us to behave more competently. This phenomenon is popularly known as "positive thinking".

This paper is concerned with two recent research approaches to self-concept, based on attribution and expectancy theories. The implications of this book for adult influence on the development of children's self-concepts will also be discussed. Attribution theory focuses on the inferences (attributions) people make regarding what causes the outcomes of their actions (Arkin & Maruyama, 1979). Beliefs people have about the causes of their successes and failures (causal attributions) are viewed as influencing their subsequent feelings, attitudes, and behaviors in specific situations (Ames, 1978; Andrews & Debus, 1978). Although Weiner (1979) suggests that causal attributions have several dimensions, research reported in this paper focuses on attributions categorized by stability and locus. The stability dimension refers to the degree to which causes are perceived as more or less constant across time. Unstable causes include luck and effort, both of which can vary from moment to moment; stable causes include ability and the difficulty of a given task. Cutting across the stability dimension is the locus dimension, which distinguishes causes that are internal, or within the individual, from those that are external to the individual. Internal causes include ability and effort; external causes include luck and task difficulty (Weiner, 1979).

Expectancy theory focuses on the role that various expectations play in a person's behavior. People's conscious and unconscious self-evaluations, regardless of accuracy, lead them to act as though these evaluations were correct (Finn, 1972). According to Bandura (1977), one's expectations for success combine the expectancy that a given action will result in a given outcome, and the expectancy that one can produce that action. Expectancies and attributions are conceptually related in that expectancy of success is based on an assumed level of ability (attribution) in relation to the perceived difficulty of a task,

combined with an estimate of intended effort and anticipated luck (expectancy) (McMahan, 1973).

Successful experiences can affect the development of the expectation that one can cope successfully with similar situations in the future (Bandura, 1977). Thus, self-concept reflects (is a result of) performance. Bandura suggests that the strength of a person's convictions about his or her ability affects the likelihood that he or she will attempt to cope with challenging situations and also determines how much effort will be exerted and how long efforts will persist. Thus, to the extent that self-concept can motivate performance, it can be considered a causal factor in performance.

Expectancy and attribution theories suggest that children come to view themselves as more or less competent largely as a result of their successes and failures in dealing with their environment. Feedback from adults and peers is also important. From information from these two sources -- personal experience and feedback from others -- children learn to see their own potential achievement as being regulated by their behavior (Finn, 1972). Younger children appear to depend more than older children on external influences (particularly parents, teachers, and caretakers) in perceiving their experiences, interpreting them, and formulating inferences and value judgments about themselves (Nichols, 1979; Parsons & Ruble, 1977; Powers, Drane, Close, Noonan, Wines, & Marshall, 1971; Ruble, Parsons, & Ross, 1976). This suggests that adult feedback is an especially important factor in the development of younger children's thinking about themselves (Devrensky, 1977).

A number of factors derived from attribution and expectancy theories influence children's thinking about their self-concept and achievement-related behavior. Among these factors are past experience, task-related effort expended, expectancies of success or failure, and ego protection. Following a discussion of research concerning these factors, strategies adults can use to help children develop positive views of themselves are presented.

The Effects of Past Experience, Expectancies, and Effort on Self-Concept and Achievement

Consistency of performance over several trials of a task, and immediate outcome of single trials are both associated with causal attributions and with ratings of one's own ability. Ames, Ames, and Felker (1976) found that sixth grade boys who performed consistently tended to attribute their performance to stable fac-

tors (ability and task difficulty). Boys whose performance was inconsistent attributed their performance to unstable factors (luck and effort). When outcome on a single trial conflicted with a child's usual pattern of outcomes, the usual pattern of outcomes was more influential than outcome of a that one trial in the kinds of attributions made. Thus, boys who experienced consistent performance rated their ability higher after success than after failure; boys who experienced both success and failure rated their ability similarly after each. Apparently, interpretations of a single experience are influenced by the consistency of the individual's history of experiences.

Children's behavior in academic problem-solving also appears to be associated with their attributions about the causes of their successes and failures (Andrews & Debus, 1978; Kukla, 1972, 1978; Weiner, 1979). Task persistence is a case in point. Dweck (1975) compared learned helpless children and persistent children on their performance in solving math problems and on the degree to which they attributed their performance to effort. Learned helpless children characteristically expect failure, and their performance deteriorated following failure or difficulty. Persistent children are characterized by persistence at a task following failure or difficulty. Dweck found that learned helpless children took less personal responsibility for their performance on the math problems and tended to place less emphasis on the role of their own effort in determining success and failure than did the persistent children. However, when learned helpless children were taught to attribute their failures to their own lack of effort, rather then to lack of ability or to external factors, they showed less decrease in their performance at the task after failure.

Dweck's study and a similar study by Andrews and Debus (1978) suggest that learned helpless children tend to believe that their failures are a result of lack of ability or of external factors beyond their control. Therefore, these children are unlikely to persist at a task after failure. On the other hand, persistent children are more likely to believe that failure is a result of their own lack of motivation and frequently will increase their efforts on a task after failure. It appears that expectations are not only a factor in performance, but also, when outcome is different than expected, it is interpreted in such a way that the expectation is emphasized and preserved.

While Dweck's study focused on learned helpless children, studies of other kinds of children have also indicated that causal attributions influence and are influenced by anticipated

outcomes. Studies relating attribution theory to expectancy theory indicate that outcomes that differ from what is expected are more likely to be seen by children and adults as caused by unstable factors, whereas expected outcomes tend to be attributed to stable factors (McMahan, 1973; Valle and Frieze, 1976). When stable factors, such as ability level, are seen as causes for performance, expectations for future success tend to be high following success and low following failure. On the other hand, when unstable factors (i.e., luck) are perceived as causes for performance, expectations for future success tend to be high following failure and low following success (Andrews & Debus, 1978; McMahan, 1973; Valle & Frieze, 1976).

The links among past experiences, expectancies, and causal attributions have implications for children's self-concept and achievement. Patterns of performance and beliefs about causes of performance have potentially more influence on a child's view of him or herself than do single instances (Bandura, 1977; Ames, et al., 1976). These patterns shape expectations for future performance. Nichols (1979) has summarized the interrelationships in a helpful manner:

> . . . a person with a history of performing better than peers at a given activity is likely to attribute any given high performance to high ability and thus to expect success on future tasks. If high performance does subsequently occur, it will again be attributed to high ability. Such a person would not expect failure and would, if failure occurs, attribute it to bad luck or lack of effort. A history of poor performance relative to others would, on the other hand, lead to attribution of success to good luck or high effort and attribution of failure to poor ability . . . (p. 94)

Protection of the Self-Concept

Studies relating performance, attribution patterns, and expectations to self-concept show that individuals sometimes perceive the causes for their successes and failures according to a self-serving bias by which self-esteem is protected or enhanced. Ames (1978), Ames and Felker (1976), Arkin and Maruyama (1979), and Nichols (1979) found that elementary and college age students who have high self concepts tend to attribute the causes of their performance to their own ability and effort (internal factors). Students with low self concepts tend to see their performance as caused by luck and task difficulty (external factors), as well as to effort.

Self-concept, described by Ames (1978) as "a set of beliefs about the self that are presumed to be a dominant feature in social perception and resulting attributional and social processes," appears to be influence how people interpret the immediate outcomes of their performances. Ames (1978) demonstrated that in a competitive situation, fifth grade children with high self-concepts perceived themselves as more skillful after succeeding at a task than after failing, whereas the low self-concept children rated their ability similarly after both success and failure. Further, although high self-concept children rated their ability higher than did low self-concept children following success, they rated their ability lower following failure. Apparently, low self-concept children take less responsibility for both their successes and their failures than do high self concept children.

Implications for Adult Intervention

The studies presented in the preceding sections indicate that children's ideas about their ability following success and failure, and about the causes of their performances, are related to four major factors; consistency of outcome over trials, consistency between the child's expectation and a particular instance, the child's expectations for future performance, and the child's self-concept. Relations among self-concept, performance expectations, and attributions are summarized below:

Table 1: Relations Among Self-Concept, Expectations, and Attributions

Self-Concept Level	Patterns of Expectations on Immediate Task (Specific Expectations)	Patterns of Causal Attribution Following Success and Failure	Expectations for Future Performance (General Expectations)
High	Success	Success outcomes attributed to: ability task difficulty effort Failure outcomes attributed to: luck ta k difficulty effort	Success and personal control over what happens

Low	Failure	Success outcomes attributed to: luck task difficulty	Failure and little or no personal control over what happens
		Failure outcomes attributed to: luck task difficulty	

Children who experience both success and failure, who expect failure, and/or who have low self-concepts tend to take less personal responsibility for their performance than do children who persist at tasks, whose experience is consistent, and/or who have high self-concepts. The first group of children also interprets both successes and failures similarly and as more externally than internally caused.

This scenario suggests a self-perpetuating circle of relations. Change in self concept is likely to occur only when change in one or more of the factors represented in Table 1 occurs. Such change is unlikely to occur without intervention since each of the factors contributes toward maintaining the status quo. This suggests that competent, self-assured children will continue to maintain their self-confidence and persistence. Although the picture for less competent children and for those who have inaccurately low perceptions of their abilities is less optimistic, there is potential for change through intervention. Recent research indicates that attributions provide one avenue through which children's expectations (and ultimately, self concepts) develop and are modified. The research also suggests that others (e.g., adults) can help children to develop patterns of beliefs about themselves that will enable them to have self-expectations that are consistent with their actual abilities.

Attribution-focused intervention strategies aimed at each dimension represented in Table 1 are demonstrated in the research presented below. Statements about the self are employed alone and in combination with reinforcement. While approaches that involve helping children improve their actual competence (e.g., reading scores or math skills) are not described in this review, it is important to note that such interventions can influence a child's pattern of experience. These approaches can have powerful effects (Bandura, 1977) and can increase the probability that positive perceptions of one's own ability will also be realistic.

Effort-Oriented Attribution Strategies

Two studies indicate that children can be taught to attribute the outcomes of their performances to their own efforts. Dweck's (1975) study illustrated a technique for training children to attribute success and failure to their own efforts. Children's typical levels of performance at a math task were assessed. The children then solved math problems at which they experienced either 80 percent success and 20 percent failure or 100 percent success. After success, trainers verbally attributed the child's performance to the child's responses (e.g., "You really tried hard that time"). Following failure, trainers attributed cause for failure to insufficient effort on the part of the child (e.g., "You should have tried harder"). Dweck found that children who had experienced failure and received the effort-oriented attributions following these experiences did not decrease in their performance even though they experienced failure in the subsequent testing situation. The performance of children who had experienced the success only treatment, however, deteriorated following failure in the subsequent testing situation. This result suggests that controlled failure experiences combined with statements about effort can help children learn how to handle failure.

Andrews and Debus (1978) used systematic social reinforcement and token plus social reinforcement to teach sixth grade boys to make causal statements oriented to their own efforts. These investigators verbally reinforced ("That's good! OK!") all statements about their efforts made by the children regarding their successes and failures. If children did not make such statements they were elicited by the trainer after success trials with statements such as, "It looked as though you were trying pretty hard that time." After failure trials, trainers said, "... we usually fail because we don't try hard enough, don't we?" Some children received tokens, which could be exchanged for gifts, for effort attributions in addition to the verbal reinforcement by the trainer. Both the verbal reinforcement and the token plus verbal reinforcement strategies were successful in increasing children's attribution of cause for success and failure to their own efforts.

These studies illustrate that children can be taught by reinforcement to attribute cause for their performance to their own effort. Dweck's study also links children's effort-oriented attributions with improved performance.

Expectancy-focused Attribution Strategies

Rappaport and Rappaport (1975) influenced children's expectations for performance through attributing positive characteristics to the children. Five and six-year old children in an urban public school compensatory education program were selected on the basis of their low scores on a reading readiness test. The children were assigned to three experimental groups: a teacher expectancy group, in which the children's teachers were told that the identified children were highly motivated, had high potential, and had successfully completed the assigned tasks; a pupil expectancy group, in which the children were strongly praised for their superior performance on various tasks, were made to feel that they had exceptional talent, and were told in strong terms that they would undoubtedly do very well in school and that the experimenter would follow their progress; and a teacher and pupil expectancy group, in which positive feedback regarding the identified children was given to the teachers in the children's presence. Two control groups receiving no attributions were also established. Children in the two groups in which the children's expectations had been influenced had larger gains in their reading readiness scores than did children in the control groups or in the group in which only the teacher's expectations had been influenced. This study suggests that children's positive expectations can be modified by adults and may affect their performances.

Self-concept-focused Attribution Strategies

Strategies combining attribution and reinforcement have been used successfully to raise children's academic self-concept. Lane and Muller (1977) and Hauserman, Miller, and Bond (1976) systematically reinforced children's positive self-descriptive statement (attributions) regarding successful classroom experiences. Lane and Muller wrote positive phrases ("I like that, excellent, good thought!") by each positive self-descriptive statement fifth graders wrote in a series of essays about themselves and their academic life. Hauserman, Miller, and Bond provided social reinforcers (a hug, pat on the back, saying "I'm proud of you!") to individual children in kindergarten through fourth grade in response to the children's spoken positive self-descriptive statements regarding successful classroom experiences. When children did not make such statements, teachers elicted the statements by asking the child to say something good about him or herself after the teacher had observed a successful classroom experience. Increases in positive self-descriptive statements by the children in these studies were accompanied by increases in scores on self-concept measures.

Washington (1976) studied changes in self-concept in three to five-year-old children using a series of weekly individual conferences between the preschool teacher and each child in which accomplishments of the child were emphasized and goals were mutually agreed upon by child and teacher. In addition, daily twenty-minute small group self-awareness sessions were held in which teachers provided children with positive attributions about themselves, their families, and important school and community people. Parents were expected to support teachers' efforts by taking a few minutes each week to discuss with their child the goals and accomplishments for the week. Children involved in the treatment group scored higher on a self-concept measure than did children in control groups.

Attribution strategies used to influence aspects of self-concept other than academics have also resulted in behavior change. Miller, Brickman, and Bolen (1975) contrasted an attribution strategy and a persuasion/exhortation strategy in influencing students' littering behavior in the classroom. For the attribution students, one or two statements per day regarding littering were made to classrooms of fifth graders over an eight day period, such as the teacher praising the class for being ecology-minded and not throwing candy wrappers on the auditorium floor at an assembly. The teacher also shared with the class the janitor's comment that the class was one of the cleanest in the building. The principal of the school visited the room and commented briefly on its neatness and then commended the class for its orderliness in a letter to the class. The teacher also elicited positive self-attributions from students concerning littering.

Students in other classrooms were exposed to a persuasion/exhortation strategy in which they received similar messages, except that messages included the reasons why littering was bad and "should" statements were used throughout. Although both groups improved, the attribution classrooms demonstrated significantly less littering compared with the persuasion groups. This behavior was maintained over a three month period by the teacher's occasional reminder that, "You are neat."

The same investigators used similar strategies to increase students' math self-esteem and math performance in a five-condition experiment. Pretest math scores were similar for students in all five conditions. Attribution-ability students received written and oral positive messages concerning their math ability over a period of eight days. Letters including similar messages from the teachers and principal were sent home with students. Students also received medals stating "good

student -- math." Attribution-effort students recieved comments and letters regarding their efforts in math. These students were told that they were trying more in arithmetic and were working harder in that subject. They received medals saying, "hard worker -- math."

Similar ability or effort messages were given to students in two persuasion conditions but were prefaced by "you should" or stated in command form such as "try harder." A reinforcement conditon was also used in which the messages given by teachers to students were, "I'm proud of your work, I'm pleased with your progress, very good!"

Although students in all conditions improved in math self-esteem and math performance, the two attribution groups showed the most dramatic improvement in math self-esteem from pre- to post-test and greater and more stable improvement in math performance. The authors suggested this result was due to the acceptance, by the children, of attribution statements as true (i.e., statements of fact) even when they are intended as persuasion devices. "True" statements are apparently more convincing than are more blatant persuasive messages.

Conclusions

An analysis of the studies presented in this review suggests that the nature of children's experience is a critical element in children's notions about themselves. Whether that experience is consistent or inconsistent with regard to achievement-related tasks has a bearing on the pattern of beliefs about him or herself a child adopts. Since attributions are linked to expectancies regarding future experience with similar tasks, once a pattern of attributions is adopted it will tend to reinforce certain expectancies and self-perceptions. These, in turn, influence performance and promote the already adopted pattern of attributions.

This "pattern establishment" phenomenon suggests that the initial experiences a child has with new tasks and situations may be very important in the formation of beliefs and expectancies regarding that task or situation. Nevertheless, even after expectancy and attribution patterns have been established, they can be changed by directly altering the child's pattern of attributions. Self-concept and performance levels (experience) can be similarly changed. Adults can alter the pattern of children's attributions by stating the attribution for the child (a "power of suggestion" approach) or by reinforcing desired attributions when children express them.

Care must be taken not to set children up for a "rude awakening" by encouraging unrealistic perceptions of their abilities. Positive attributions can best be used in combination with skill development and/or when children are capable of better performance than they are showing. The research suggests that underachieving children have, for one reason or another, acquired the belief that they have no control over the outcomes of their actions. Their successes do not contribute to building a more positive self-concept because these children do not link their successes to internal or "self-produced" causes -- i.e., their own ability or effort. Parents, teachers, and others for whom the development and well-being of children is a major concern can use the strategies described here to help these children to link ability and effort appropriately to the outcomes of their actions.

Different attribution strategies are appropriate for children with different characteristics and needs. Consequently, it is important to distinguish children who are underachieving from those who are achieving at their ability levels. The age and developmental level of the child must also be considered in anticipating positive changes and in selecting strategies to bring them about. Different kinds of strategies may be called for in different situations (e.g., achievement-related situations, competitive vs. cooperative situations, different subjects, amount of challenge involved, etc.).

Finally, it is important to recognize that, although the strategies produced results in relatively short periods of time with children of a variety of ages and backgrounds with low self-concepts, these approaches are based on complex relations that will undoubtedly be better understood as additional research is done. In the studies where changes were produced, the strategies were applied consistently over time. This factor may be critical for successful behavior change.

References

Ames, C. Children's achievement attributions and self-reinforcement: Effects of self-concept and competitive reward structure. Journal of Educational Psychology, 1978, 70, 345-355.

Ames, C., Ames, R., & Felker, D. Informational and dispositional determinants of children's achievement attributions. Journal of Educational Psychology, 1976, 68, 63-69.

Andrews, G., & Debus, R. Persistence and causal perception of failure: Modifying cognitive attributions. Journal of Educational Psychology, 1978, 154-166.

Arkin, R., & Maruyama, G. Attribution, affect, and college exam performance. Journal of Educational Psychology, 1979, 71, 85-93.

August, G., & Felker, D. Role of affective meaningfulness and self-concept in the verbal learning styles of white and black children. Journal of Educational Psychology, 1977, 69, 253-260.

August, G., Rychlak, J. F., & Felker, D. Affective assessment, self-concept, and the verbal learning styles of fifth grade children. Journal of Educational Psychology, 1975, 67, 801-806.

Bandura, A. Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 1977, 84, 191-215.

Barr, A. S., & Jones, R. E. The measurement and prediction of teacher efficiency. Review of Educational Research, 1958, 28, 256-264.

Brookover, W., Thomas, S., & Patterson, A. Self-concept of ability and school achievement. Sociology of Education, 1964, 37, 271-278.

Calhoun, G., & Morse, W. Self-concept and self-esteem: Another perspective. Psychology in the Schools, 1977, 14, 318-322.

Calhoun, G., Warren, P., & Kurfiss, J. A comparison of the self-concept and self-esteem of black and white boy scouts. Clearing House, 1976, 50, 131-133.

Calsyn, R., & Kenny, D. Self-concept of ability and perceived evaluation of others: Cause or effect of academic achievement? Journal of Educational Psychology, 1977, 69, 136-145.

Cobb, H. Self-concept of the mentally retarded. Rehabilitation Record, 1961, 2, 21-25.

Combs, A., Soper, D. W., & Courson, C. C. The measurement of self-concept and self-report. Educational and Psychological Measurement, 1963, 23, 493-500.

Cooper, H., & Baron, R. Academic expectations, attributed responsibility, and teachers' reinforcement behavior: A suggested integration of conflicting literatures. Journal of Educational Psychology, 1979, 71, 274-277.

de Groat, A. F., & Thompson, G. G. A study of the distribution of teacher approval and disapproval among sixth-grade pupils. Journal of Experimental Education, 1949, 28, 57-75.

Devrensky, J. L. Effective communication with children: Movement towards a more positive self-concept. In B. Persky & L. Golubchick (Eds.), Early childhood. Wayne, NJ: Avery Publishing Group, 1977.

Dweck, C. The role of expectations and attributions in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 1975, 31, 674-685.

Dweck, C., Davidson, W., Nelson, S., & Enna, B. Sex differences in learned helplessness: II. The contingencies of evaluative feedback in the classroom and III. An experimental analysis. Developmental Psychology, 1978, 14, 268-276.

Felker, D. W. Building positive self concepts. Minneapolis, MN: Burgess Publishing Co., 1974.

Finn, J. Expectations and the educational environment. Review of Educational Research, 1972, 42, 387-410.

Hauserman, N., Miller, J. S., & Bond, F. T. A behavioral approach to changing self-concept in elementary school children. The Psychological Record, 1976, 26, 111-116.

Jensen, R., & Moore, S. The effect of attribute statements on cooperativeness and competitiveness of school age boys. Child Development, 1977, 48, 305-307.

Kukla, A. An attributional theory of choice. In L. Berkowitz (Ed.), Advances in experimental and social psychology (Vol. 2). New York: Academic Press, 1978.

Kukla, A. Attributional determinants of achievement-related behavior. Journal of Personality and Social Psychology, 1972, 21, 166-174.

Lane, J., & Muller, D. The effect of altering self-descriptive behavior on self-concept and classroom behavior. The Journal of Psychology, 1977, 97, 115-125.

Lecky, P. Self-consistency: A theory of personality. New York: Island Press, 1945.

Lewin, K. A dynamic theory of personality. New York: McGraw-Hill, 1935.

Martire, J. G. Relationship between the self-concept and differences in the strength and generality of achievement motivation. Journal of Personality, 1956, 24, 364-375.

McMahan, J. Relationship between causal attributions and expectancy of success. Journal of Personality and Social Psychology, 1973, 28, 108-114.

Mead, G. H. Mind, self and society. In A. Strauss (Ed.), The social psychology of George Herbert Mead. Chicago: University of Chicago Press, 1956.

Miller, R., Brickman, P., & Bolen, D. Attribution versus persuasion as a means for modifying behavior. Journal of Personality and Social Psychology, 1975, 31, 430-441.

Nichols, J. Development of perception of own attainment and causal attributions for success and failure in reading. Journal of Educational Psychology, 1979, 71, 94-99.

Parker, H. Contingency management and concommitant changes in elementary school students' self-concepts. Psychology in the Schools, 1974, 11, 70-79.

Parsons, J., & Ruble, D. The development of achievement-related expectancies. Child Development, 1977, 48, 1075-1079.

Powers, J., Drane, H., Close, B., Noonan, M., Wines, A., & Marshall, J. A research note on the self-perception of youth. American Educational Research Journal, 1971, 8, 665-670.

Rappaport, M., & Rappaport, H. The other half of the expectancy equation: Pygmalion. Journal of Educational Psychology, 1975, 76, 531-536.

Riemer, B. Influence of causal beliefs on affect and expectancy. Journal of Personality and Social Psychology, 1975, 31, 1163-1167.

Rogers, C. A theory of therapy, personality and interpersonal relationships as developed in the client-centered framework. In S. Koch (Ed.), Psychology: A study of a science (Vol. 3). New York: McGraw-Hill, 1959.

Rogers, C. Casebook of non-directive counseling. Boston: Houghton Mifflin, 1947.

Rogers, C., Smith, M., & Coleman, J. Social comparison in the classroom: The relationship between academic achievement and self-concept. Journal of Educational Psychology, 1978, 70, 50-57.

Ruble, D., Parsons, J., & Ross, J. Self-evaluative responses of children in an achievement setting. Child Development, 1976, 47, 990-997.

Shiffler, N., Lynch-Sauer, J., & Nadelman, L. Relationship between self-concept and classroom behavior in two informal elementary classrooms. Journal of Educational Psychology, 1977, 69, 349-359.

Snygg, D., & Combs, A. W. Individual behavior. New York: Harper and Brothers, 1949.

Steiner, I. Self-perception and goal setting behavior. Journal of Personality, 1957, 25, 344-355.

Valle, V., & Frieze, I. Stability of causal attributions as a mediator in changing expectations for success. Journal of Personality and Social Psychology. 1976, 33, 579-587.

Washington, K. The effects of systematic reinforcement and a self-awareness program on the self-concept of black preschool children. Child Study Journal, 1976, 6, 199-208.

Weiner, B. Theories of motivation: From mechanism to cognition. Chicago: Markham, 1972.

Weiner, B. A theory of motivation for some classroom experiences. Journal of Educational Psychology, 1979, 71, 3-25.